

PMDF User's Guide OpenVMS Edition

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OpenVMS Alpha V7.0 or later
OpenVMS I64 V8.2 or later

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Preface

Purpose of this Manual

This manual describes the various user-level utilities and interfaces provided with the PMDF family of products. The intended audience is both users and system managers who will be using PMDF or any of the layered PMDF products.

Overview of this Manual

This manual consists of nine chapters:

Chapter 1, *Sending mail messages*, explains how to send mail messages to PMDF using a variety of the more common user interfaces available for OpenVMS. This is the chapter to read if you want to learn how to send network mail.

Chapter 2, *Receiving Mail Messages*, explains briefly how to read mail messages delivered to you by PMDF.

Chapter 3, *Message Filtering, Message Forwarding, and Vacation Notices*, describes the web-based mail filtering facility.

Chapter 4, *Password Change Utility*, describes the web-based password change utility.

Chapter 5, *The DELIVER Message Delivery System*, describes the mail screening facility, DELIVER.

Chapter 6, *Mail Server Commands*, explains how to use a PMDF mail server to subscribe to mailing lists or obtain files made available through the server.

Chapter 7, *Pine User Agent*, describes the PMDF Pine user agent and IMAP client.

Chapter 8, *The PMDF MAIL Utility*, describes the PMDF MAIL utility which is an extended version of VMS MAIL.

Chapter 9, *Utilities*, describes some of the other PMDF utilities, including PMDF QM which can be used to examine your queued messages awaiting delivery.

Chapter 10, *Notes for POP and IMAP Clients*, provides tips for POP or IMAP client users remotely accessing their mailbox on the PMDF server system.

Availability

PMDF software products are marketed directly to end users in North America, and either directly or through distributors in other parts of the world depending upon the location of the end user. Contact Process for ordering information, to include referral to an authorized distributor where applicable:

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- This product includes cryptographic software written by Eric Young (eay@cryptsoft.com).
- This product includes some RSA Data Security, Inc., software.

1 Sending mail messages

This chapter focuses primarily on sending mail messages with VMS MAIL and its equivalents: DECwindows MAIL, callable MAIL, Pathworks MAIL agents, PMDF MAIL, and Gold-Mail. Throughout this chapter, except where noted, the phrase “VMS MAIL” is used to refer to VMS MAIL and its equivalents. The notable exceptions to this occur when specific VMS MAIL commands such as EXTRACT, SEND, or SET FORWARD are discussed. Discussions concerning particular VMS MAIL commands are relevant only to VMS MAIL and PMDF MAIL. However, such topics as addressing formats are universal to all of these VMS MAIL equivalents.

Information on sending mail from ALL-IN-1 IOS and A1MAIL (MailWorks) with PMDF-MR, and sending FAXes with PMDF-FAX is also presented in this chapter.

1.1 Sending Mail With VMS MAIL

You should continue to use VMS MAIL like you always have in the past. The only change in your usage will be how you specify addresses when sending mail to PMDF. When addressing a message to PMDF, enclose the address in double quotes,¹ and prefix the (now quoted) address with IN% as shown below:

```
IN%"address"
```

For example,

```
$ MAIL
MAIL> SEND/CC
To:      in%"jdoe@example.com,in%"sbeebe@example.com"
Cc:      in%"misha@example.com"
Subj:    Full moon tonight!
Enter your message below. Press CTRL/Z when complete, or CTRL/C to quit:
There's a full moon tonight. Let's meet in the back alley and have a
howling good time.

      \Rex
CTRL/Z
MAIL>
```

After you have entered the addresses, continue as you normally would; *i.e.*, supply a subject line, enter the message body, *etc.* After you end the message with a CTRL/Z, it will be sent; no other action on your part is required. As usual, if you enter a CTRL/C, the message send will be aborted.

Note: If you are using PMDF MAIL, then you should omit the IN% prefix and enclosing double quotes. They are not required.

¹ Here, and throughout this manual, *double quote* refers to the character " and should not be confused with the *single quote* character, ', which is also used as the apostrophe character.

Sending mail messages

Sending Mail With VMS MAIL

Each address you specify with the IN% prefix must be in "RFC 822 format". This format, for those technically inclined, is specified in the document *Standard for the Format of ARPA Internet Text Messages* (RFC 822), a copy of which can be found in the PMDF_ROOT:[DOC.RFC] directory.² Here are some sample addresses, all in RFC 822 format:

```
in%"jdoe@example.com"  
in%"John the engineer <jdoe@example.com>"  
in%"'JDoe@example.com' <jdoe@example.com>"  
in%"jdoe@example.com (john)"
```

These samples all specify the same address, jdoe@example.com.

Warning: Failure to properly terminate any quoting used in VMS MAIL addresses (*i.e.*, omitting a closing double quote, ") can cause problems. Some versions of VMS MAIL will go into an infinite loop if quoting is not properly terminated. More recent versions of VMS MAIL will signal a fatal error and abort if unbalanced quotes are used. This is strictly a problem with VMS MAIL and not with PMDF; PMDF is not involved in any way with this part of VMS MAIL error handling.

PMDF allows multiple, comma-separated RFC 822 addresses inside of a single IN% construct; for example,

```
IN%"USER1@SYSTEM1.EXAMPLE.COM, USER2@SYSTEM2.ABC.EDU"
```

While this format saves a certain amount of repetitive typing, it does, however, inhibit somewhat the transformation logic PMDF uses when trying to correct syntactically illegal addresses. Furthermore, in the event of an error, the particular address causing the problem will not be identified, since, owing to limitations of VMS MAIL, error reporting is done on a per-IN% construct basis.

1.1.1 Quote Character Substitutions

Internet addresses routinely contain the double quote character, ". In order to represent this character yet satisfy the quoting conventions of VMS MAIL, certain character substitutions must be made, as shown in Table 1-1. These translations are necessary in order to allow specifying double quotes inside an address even though they are not normally allowed inside a VMS MAIL address. Preferred usage when entering addresses manually is to substitute single quotes for double quotes and \' for single quotes. For example:

² RFC 822, *Standard for the Format of ARPA Internet Text Messages*, David H. Crocker, 1982

```
IN%"'tony li'@hmc.edu"  maps to  "tony li"@hmc.edu
IN%"\'tonyli\'@hmc.edu" maps to  'tonyli'@hmc.edu
```

Table 1–1 Foreign Protocol Address Mapping

Sequence	Is Translated To	
'	"	(double quote)
\'	'	(single quote)
\d	"	(double quote)
\s	'	(single quote)
\D	"	(double quote)
\S	'	(single quote)
\\	\	(backslash)

Alternatively, you might find it convenient to use PMDF MAIL—which requires no special quoting or character substitutions when entering Internet addresses—when sending to Internet addresses containing special characters.

1.1.2 Sending Messages From DCL

From DCL, you can use the MAIL command to send a message to a PMDF address, but be careful to use the proper number of quotes:

```
$ MAIL/SUBJECT="subject-line" msgfile.ext "IN%"address""
```

The existing quotes in IN%"address" have each been repeated, and an extra pair of quotes surrounding the entire construct added. For example,

```
$ MAIL/SUBJECT="Latest results" D1: [DATA] EH011.DAT "IN%"BOB@EXAMPLE.COM""
```

Note that messages can also be sent from DCL with the PMDF SEND utility; see Chapter 9.

1.1.3 Sending Messages From Remote DECnet Nodes

If you are not on a system running PMDF, but connected via DECnet to a system that is, then you can still use PMDF to send mail. Suppose that the system running PMDF has the DECnet node name NODE. To send mail to PMDF on that system, use the addressing syntax:³

```
NODE::IN%"address"
```

For example,

³ Note for system managers: The system-wide logical MAIL\$SYSTEM_FLAGS must translate to an even number for this technique to work. When MAIL\$SYSTEM_FLAGS translates to an odd value, VMS MAIL will strip off the "NODE::" portion of the address if NODE is a member of the local cluster. This will then result in an error—error activating transport IN—when VMS MAIL tries to send to IN%".

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```
$ MAIL
MAIL> SEND
To:      NODE::IN%"jdoe@example.com"
Subj:    Vaccination
Enter your message below. Press CTRL/Z when complete, or CTRL/C to quit:
JDoe, phone home. It's time for your project status update.

- EEF
CTRL/Z
MAIL>
```

To simplify things further, you can establish the following logical name definition in your LOGIN.COM file:

```
$ DEFINE IN NODE::IN%
```

Then, when you send mail to PMDF, you can use the addressing syntax:

```
IN: : "address"
```

1.1.4 Sending Messages From Pathworks MAIL Agents

PMDF fully supports the Pathworks MAIL agents such as PCMAIL and Mail for Macintosh. PMDF address formats within these programs are the same as they are for regular VMS MAIL as described previously.

1.1.5 Sending Messages From Callable MAIL

PMDF fully supports the user-callable VMS MAIL interface, commonly referred to as “callable MAIL”. Applications using this interface need not be installed with privileges for PMDF to operate correctly.

PMDF address formats within applications that use callable MAIL are the same as they are for regular VMS MAIL as described previously.

1.1.6 Adding a Signature to Outgoing Messages

With PMDF you can automatically add one or more signature lines to messages which you send.⁴ These lines can be used to “sign” messages; in them you can provide addressing information, telephone and FAX numbers, and any other desired text.

⁴ The facility described here only works when PMDF is running on the computer from which you send your mail messages. It will not work, for instance, when you send messages from a remote DECnet node as described in Section 1.1.3.

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To add only a single signature line, *line*, define the logical

```
$ DEFINE PMDF_SIGNATURE "line"
```

For instance, the definition

```
$ DEFINE PMDF_SIGNATURE "Disclaimer: Don't blame me!"
```

will cause the signature line "Disclaimer: Don't blame me!" to be appended to the end of each message you send with PMDF. This logical name definition should also be added to your LOGIN.COM command procedure.

To include more than one signature line, create a text file containing the desired lines and then define the PMDF_SIGNATURE logical as follows:

```
$ DEFINE PMDF_SIGNATURE "@signature-file"
```

Here, *signature-file* is the name of the file containing the signature lines. Be sure to use a complete file specification. For example, suppose that the signature lines are stored in the file PMDF_SIGNATURE.TXT which you keep in your login directory. Then the correct logical definition would be

```
$ DEFINE PMDF_SIGNATURE "@SYS$LOGIN:PMDF_SIGNATURE.TXT"
```

Again, you should also add this definition to your login procedure.

Note: Signature lines are not attached to messages sent using SEND/FOREIGN. In addition, signature lines cannot be attached to messages sent by VMS MAIL that do not pass through PMDF. If a message is sent to a mixture of PMDF addresses and non-PMDF addresses, only the copies sent via PMDF will have signature information attached.

1.1.7 Forwarding Mail

You can have all of your mail on a particular node or cluster automatically forwarded to a different mail address. This is done with VMS MAIL's SET FORWARD command. For versions of OpenVMS prior to 7.1, use:

```
MAIL> SET FORWARD "IN%"address"
```

On OpenVMS 7.1 or later, use:

```
MAIL> SET FORWARD IN%"address"
```

Here, *address* is the address to which your mail should be forwarded; that is, your forwarding address.

Note that if using OpenVMS 7.0 or earlier, the existing quotes in the usual IN%"*address*" have each been repeated, and an extra pair of quotes surrounding the entire construct added. This is mandatory. If you forget to do this, VMS MAIL will not warn you. Worse yet, you will end up with a nonfunctional forwarding address. So, after changing your forwarding address, be sure to test for correct behavior by sending a test message to yourself.

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Here are some sample SET FORWARD commands for systems running OpenVMS Version 7.0 or earlier:

```
MAIL> SET FORWARD "in%" "mrocheck@puppy.farm.org" ""
MAIL> SHOW FORWARD
Your mail is being forwarded to IN% "mrocheck@puppy.farm.org".
MAIL> SET FORWARD "in%" "Mro the dog <mrocheck@puppy.farm.org>" ""
MAIL> SHOW FORWARD
Your mail is being forwarded to IN% "Mro the dog <mrocheck@puppy.farm.org>".
MAIL>
```

Note that you can also use the DELIVER facility or subaddresses or both to selectively forward mail which you receive. See Section 2.3.

1.1.8 Sending and Receiving Binary Files

PMDF MAIL's SEND command can be used to send binary files, or any sort of OpenVMS file (*e.g.*, executables, spread sheets, word processing documents, images, databases, indexed files, *etc.*). The commands

```
$ PMDF MAIL
EMAIL> SEND file-spec
```

will send the file *file-spec* as an e-mail message.⁵ The file will automatically be encoded into a format suitable for transmission via e-mail.

For example, try sending an executable program to yourself:

```
$ PMDF MAIL
EMAIL> SEND SYS$SYSTEM:ERF.EXE
To: your-address
Subject: Test
EMAIL>
```

Upon reception of such a message, PMDF will automatically decode the message and deliver it to you. Generally, the resulting message cannot be read directly, but must instead be extracted to a file with the EXTRACT command.

Continuing with the previous example, here's how to extract the received message:

```
EMAIL> DIRECTORY/NEW
# From Date Subject
1 BOB@EXAMPLE.COM 16-AUG-2012 Test 1
2 BOB@EXAMPLE.COM 16-AUG-2012 Test

EMAIL> READ 1

From: BOB@EXAMPLE.COM
To: BOB@EXAMPLE.COM
Subject: Test

%EMAIL-E-FORMSG, you cannot read this foreign format message 2
Use the EXTRACT command to copy the message to an external file
```

⁵ From VMS MAIL, use the SEND/FOREIGN command.

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```
EMAIL> EXTRACT ERF.EXE 3
%EMAIL-I-CREATED, D1:[BOB]ERF.EXE;1 created
EMAIL> EXIT
$ CHECKSUM/IMAGE ERF.EXE 4
file D1:[BOB]ERF.EXE;1
image section %D'2' checksum is %X'1658A905'
image section %D'3' checksum is %X'26021672'
image header checksum is %X'3BBE84B7'
checksum of all image sections is %X'305ABF77'
$ CHECKSUM/IMAGE SYS$SYSTEM:ERF.EXE
file SYS$COMMON:[SYSEXE]ERF.EXE;1
image section %D'2' checksum is %X'1658A905'
image section %D'3' checksum is %X'26021672'
image header checksum is %X'3BBE84B7'
checksum of all image sections is %X'305ABF77'
$ ANALYZE/IMAGE/OUTPUT=NLA0: D1:[BOB]ERF.EXE 5
%ANALYZE-I-ERRORS, D1:[BOB]ERF.EXE;1 0 errors
$
```

The following items of note are identified with callouts in the above example:

- 1 Typically, PMDF delivers foreign messages as two distinct mail messages. The first mail message is the actual file, in VMS MAIL's foreign message format. The second mail message contains the RFC 822 header associated with the original, encoded message.
- 2 This error message is the error message which VMS MAIL will generate when you attempt to read a foreign format mail message. You can instead see an error message such as

```
%EMAIL-W-UNAPLTYPE, unknown application subtype
```

If you get such a message, just proceed as described below and extract the message with the EXTRACT command.

- 3 Extract the message to a file with the EXTRACT command.
- 4 To check that the extracted file has not been corrupted, use the OpenVMS CHECKSUM utility to compare the checksum of the extracted file with the original file.
- 5 Typically, you will not be able to compare checksums since you will be lacking the original file. However, in the case of executable programs, you can use the OpenVMS ANALYZE/IMAGE utility to verify the soundness of the file. If ANALYZE/IMAGE reports no errors, then the file has probably not been corrupted.

You can even include a note with files you send this way by using the /INSERT qualifier with PMDF MAIL's SEND command.

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1.1.9 Header Lines in Messages

PMDF uses two sources of information to construct message headers for messages it receives from VMS MAIL.⁶ The first is VMS MAIL itself, which provides a To:, From:, Cc:, and Subject: line, and a list of addressees. The second source of information is logical names which you can define. The logical names shown in the second column of Table 1-2 can be defined to create the associated header lines. You do not need to define all of the logicals shown; only those in which you are interested. These logical names only work when PMDF is running on the system from which you send your mail. They will not, for instance, have any effect if you send mail to PMDF from remote DECnet node as described in Section 1.1.3.

For instance, to add an "Organization: Spacely Sprockets, Inc." header line to mail messages which you send, define the PMDF_ORGANIZATION logical with the command

```
§ DEFINE PMDF_ORGANIZATION "Spacely Sprockets, Inc."
```

1.1.9.1 Date: Header Lines

The Date: line is filled in with the current date and time obtained from the operating system, along with the time zone specified by the system logical name PMDF_TIMEZONE.⁷ The date and time format used conforms to RFC 822 guidelines.

1.1.9.2 Priority: Header Lines

The contents of the Priority: header are used by PMDF to determine the type of processing to perform on the message, and when to perform it. The value of the Priority: header should be one of: "third-class", "second-class", "non-urgent", "normal", and "urgent". The last three of these values are standardized in RFC 1148; the first two are used only by PMDF.

PMDF processes messages in order according to their priority. That is, messages marked urgent will be processed before messages marked non-urgent, and so on. In addition PMDF can be configured to process messages of a given priority or greater immediately and defer processing of lower priority messages until a periodic job runs. This behavior is controllable by the system manager.

Messages that are not explicitly marked with their priority are considered to be of normal priority.

⁶ A third source is PMDF itself. PMDF constructs some header lines itself such as Date:.

⁷ If PMDF_TIMEZONE is not defined, PMDF looks first for SYS\$LOCALTIME, then for SYS\$TIMEZONE_DIFFERENTIAL and SYS\$TIMEZONE_NAME.

Table 1–2 Header Lines Controlled Via Logical Name Definitions

Header line	Logical name	Notes
Comments:	PMDF_COMMENTS	1, 6
Errors-to:	PMDF_ERRORS_TO	3, 4, 6, 9
Importance:	PMDF_IMPORTANCE	2, 6, 9
Keywords:	PMDF_KEYWORDS	1, 6
Organization:	PMDF_ORGANIZATION	5, 6, 9
Priority:	PMDF_PRIORITY	2, 6, 7, 9
References:	PMDF_REFERENCES	1, 6
Reply-to:	PMDF_REPLY_TO	5, 6
Sensitivity:	PMDF_SENSITIVITY	2, 6, 9
Warnings-to:	PMDF_WARNINGS_TO	3, 4, 6, 9
X-FAX-defaults:	PMDF_X_FAX_DEFAULTS	6, 8, 9
X-PS-qualifiers:	PMDF_X_PS_QUALIFIERS	6, 8, 9

Notes

1. Multiple instances of this header line will be generated if there are carriage returns, line feeds, or carriage return line feed pairs in the translation of the associated logical. Each section of the translation that is delimited by these characters will be placed on a separate header line. Note that you can usually define such logicals only with a DCL command procedure or a program.
2. The Importance:, Priority:, and Sensitivity: header lines are defined in RFC 1148 and are mappings of the X.400 importance, priority, and sensitivity indication attributes into RFC 822. In order to retain compatibility with RFC 1148, PMDF_IMPORTANCE should be set only to “low”, “normal”, or “high”; PMDF_PRIORITY should be set only to “third-class”, “second-class”, “normal”, “non-urgent”, or “urgent”; and PMDF_SENSITIVITY should be set only to “personal”, “private”, or “company-confidential”.
3. The special address “<>” is interpreted as a request that no error messages (Errors-to: <>) or warning messages (Warnings-to: <>) be returned. This is useful for postings to large mailing lists that do not redirect error messages to their own private address. Note that not all mailers support this interpretation of “<>”.
4. PMDF not only generates Errors-to: and Warnings-to: header lines, it also uses them when returning warning and error messages. When returning an error [warning] message an Errors-to: [Warnings-to:] address is used as the return address of choice. When returning an error message, if the Errors-to: header line is not present or is illegal, the envelope From: address is used instead. When returning a warning, if the Warnings-to: header line is not present or is illegal, then the Errors-to: is used. If that is not present, then the envelope From: address is used.
5. The setting of this logical has no effect on messages being forwarded into and directly out of VMS MAIL.
6. See also Section 1.1.9.3.
7. See Section 1.1.9.2.
8. See Section 1.4.4 and Section 1.4.5.
9. Not a standard RFC 822 header line.

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1.1.9.3 Additional Header Line Prompts in VMS MAIL

You can have VMS MAIL prompt you for the contents of any of the header lines specified in Table 1-2. If any of the logical names of that table are defined and translate to a string beginning with and ending with a question mark, ?, PMDF will use the string as a prompt. For each message which is addressed to PMDF, you will be prompted with this string. Your response to the prompt is then used for the corresponding header line in the message. For instance, if you define PMDF_PRIORITY and PMDF_SENSITIVITY as

```
$ DEFINE PMDF_PRIORITY      "?Priority: ?"  
$ DEFINE PMDF_SENSITIVITY  "?Sensitivity: ?"
```

then the following prompts will appear when you send a message:

```
$ MAIL  
MAIL> SEND/CC  
To:      in%"bob@example.com"  
Subj:    Test message  
Enter your message below. Press CTRL/Z when complete, or CTRL/C to quit:  
Test message  
  
Priority: non-urgent 1  
Sensitivity: Private 2  
MAIL>
```

Note that from VMS MAIL, the prompts 1 and 2 appear after the message has been entered. This is a side effect of the way in which VMS MAIL interoperates with PMDF and other foreign protocol interfaces. From PMDF MAIL these prompts will appear before you enter the message.

Prompting is possible only in regular command-oriented VMS MAIL and PMDF MAIL; it cannot be done from DECwindows MAIL, Gold-Mail, or Pathworks MAIL agents. PMDF checks to make sure that prompting is possible and will ignore any requests for prompts in environments which cannot support such operations.

1.1.9.4 User Defined Header Lines

Users might want to add additional headers to outgoing messages from VMS MAIL that don't have specific logical names associated with them. PMDF provides a general mechanism that can be used to add arbitrary sets of headers to outgoing messages.

PMDF translates the logical PMDF_HEADER. If this logical is defined, the result is used as one line of header text and PMDF proceeds to translate the logicals PMDF_HEADER_1, PMDF_HEADER_2, PMDF_HEADER_3, and so on. Each logical that translates provides another line of header text. Translation stops with the first logical name in this sequence that not defined. Note that these logicals differ from other logicals that define headers in PMDF in that the header tag as well as the header body must be provided by the logical; *i.e.*, the translation value of each logical provides both the header name and the contents of the header line for that header.

The lines of text that result from this process are essentially treated as a set of extra message headers. PMDF removes certain headers from this set that users are not allowed to add to messages: From:, Sender:, Resent-From:, Resent-Sender:, and Date:. The remaining headers are prepended to the set of headers attached to the message by other mechanisms.

For example, the logical definitions

```
$ DEFINE PMDF_HEADER "X-Mailer: PMDF V'f$trnlm("PMDF_VERSION")' "  
$ DEFINE PMDF_HEADER_1 "X-Telephone: +1 714 555 1212"
```

would result in the two header lines

```
X-Mailer: PMDF V6.6  
X-Telephone: +1 714 555 1212
```

being added to mail messages which you send.

Standardized headers specified using this mechanism that contain addresses are rewritten using the regular PMDF rewrite rules; these headers are not exempt from rewrite processing.

1.1.10 Delivery and Read Receipts

PMDF provides support for delivery receipts (a confirmation message is sent to you when your message reaches the recipient's mailbox) and limited support for read receipts (a confirmation message is sent to you when your message is actually read by its recipient).⁸

There are two separate issues concerning delivery and read receipts. First, a mechanism must exist with which to request delivery or read receipts. PMDF provides this functionality. Secondly, support must exist at the receiving end to recognize a request for a receipt — a receipt request — and generate the requested receipt. Again, PMDF provides this functionality. However, other mailers cannot and thus it is not unusual for receipt requests to be ignored.

You can request a delivery receipt for a specific addressee by including the string

```
(delivery-receipt)
```

in the address.⁹ For example, the address specification

```
IN%"postmaster@example.com (delivery-receipt)"
```

requests delivery confirmation on a message to postmaster@example.com.

⁸ Most mail user agents which support read receipts allow the recipient to block them. This is typically the default; *i.e.*, most mail reading programs will not generate read receipts unless the reader of the message expressly approves them.

⁹ Strings enclosed in parentheses are RFC 822 comments and won't otherwise affect the address.

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The string

```
(read-receipt)
```

requests a read receipt. It operates in a similar fashion to the delivery receipt mechanism described above.

If you want to request both a delivery and read receipt, then specify

```
(delivery-receipt, read-receipt)
```

When delivering mail with a read receipt request, PMDF will convert the request into a delivery receipt request when it knows that the mail user agent to which the mail is being delivered cannot honor a read receipt request. For instance, read receipt requests on messages delivered to VMS MAIL are converted (demoted) to delivery receipt requests.

Warning: Never request a receipt of any sort when posting a message to a mailing list. While some mailing lists properly block receipt requests, many do not. Should you accidentally request, for instance, a delivery receipt from a large mailing list, you will end up with hundreds, if not thousands, of receipts.

Note: The phrases `delivery-receipt` and `read-receipt` appearing within the parentheses are actually configurable. Your system manager might have reconfigured PMDF to use different phrases.

1.2 Sending Messages With ALL-IN-1 and A1MAIL

If your site has installed PMDF-MR then you can send messages to PMDF.

If your site is using DEC Mailbus (Message Router), then messages to PMDF from ALL-IN-1 Electronic Messaging or any of the A1MAIL products should be sent to an address of the form

```
user@host@mbxname
```

where *user@host* is the address of the recipient and *mbxname* specifies the Message Router mailbox name associated with PMDF, usually `PMDF`.^a The following example uses PMDF to reach the Internet address `postmaster@example.com`:

```
postmaster@example.com@pmdf
```

If PMDF-MR resides on a remote Message Router node called, for instance, DELTA, one might reach the same Internet address by specifying

```
postmaster@example.com@pmdf@delta
```

If your site is using PMDF-MR to replace the Transport Service component of DEC Message Router,⁹ then messages to PMDF from ALL-IN-1 Electronic Messaging or any of the A1MAIL products can instead be sent using addresses of the form

^a Contact your system manager for specifics.

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Sending Messages With ALL-IN-1 and A1MAIL

user@host

where *user@host* is the address of the recipient. The following example uses PMDF to reach the Internet address `postmaster@example.com`:

`postmaster@example.com`

Note that the `IN%` prefix and quoting requirements for PMDF addresses within VMS MAIL do *not* apply when specifying PMDF addresses to ALL-IN-1 or A1MAIL.

If delivery receipt or read receipt notifications are desired, simply use the standard facilities of ALL-IN-1 or A1MAIL to specify such. Do not use the “(delivery-receipt)” construct described in Section 1.1.10 with ALL-IN-1 or A1MAIL. Similarly, message attachments are specified through the standard facilities of the ALL-IN-1 or A1MAIL user agents.

1.3 Sending X.400 Mail

If your system has PMDF-X400 or PMDF-MB400 installed, then you might be able to use it to send mail to X.400 subscribers on other systems. However, be warned that the information provided here is very general. In practice, the required information which you must supply to properly identify an X.400 addressee varies considerably from site to site as well as between X.400 service providers. You might find that you need very specific information in order to successfully address a message to a given X.400 subscriber (*e.g.*, what PRMD and ADMD to specify, whether or not initials are required, whether or not an organizational unit must be specified, *etc.*).

For sending mail to local X.400 users, you should consult your system manager or postmaster to determine the precise addressing conventions which you should use.

Now, PMDF X.400 addresses have the format

```
IN%"/attribute1=value1/attribute2=value2/.../'@X400-gateway-domain"
```

where *X400-gateway-domain* is a domain name which was selected by your system manager when PMDF-X400 was installed. *attribute1*, *attribute2*, ... are any of the attribute names listed in Table 1–3 and *value1*, *value2*, ... are allowed values for the corresponding attributes. Consult your system manager for the proper domain name to use for *X400-gateway-domain*.

Table 1–3 X.400 Attribute Names Recognized By PMDF-X400

PMDF-X400 name	X.400 attribute
C	Country
ADMD	Administrative Domain
PRMD	Private Domain
O	Organization
OU	Organizational Unit (up to four of these fields are allowed)
S	Surname
G	Givenname

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Table 1-3 (Cont.) X.400 Attribute Names Recognized By PMDF-X400

PMDF-X400 name	X.400 attribute
I	Initials
DD.xx	Domain Defined Attribute "xx"

Now, assuming that the *X400-gateway-domain* domain name is `x400.example.com`, then a sample X.400 address as entered in VMS MAIL might be

```
IN%"'/g=George/s=Jetson/o=Spacely Sprockets/'@x400.example.com"
```

This address specifies the recipient George Jetson of Spacely Sprockets. If you are using PMDF MAIL, then specify this address as

```
"/g=George/s=Jetson/o=Spacely Sprockets/"@x400.example.com
```

The only difference between these two addresses is that the `IN%" "` wrapper has been removed and the interior single quotes, `'`, changed to double quotes, `"`.

If any spaces or other special characters from the list of RFC 822 “specials” characters

```
( ) < > @ , ; : \ " . [ ]
```

appear amongst the attributes or values in the X.400 ORname portion of the address (the local-part of the address), then the entire local-part of the address must be enclosed in quotes, `"`. For instance, in the example above the space in `Spacely Sprockets` has caused the entire local-part to require quoting.

An additional quoting is required when any of the characters `=`, `$`, or `/` appear in an attribute value. These characters must be quoted by prefixing each occurrence with a dollar sign, `$`. For instance, if `erik mainz a/s` is to be specified with an Organization attribute, then it must be specified as

```
/o=erik mainz a$/s
```

so that the `/` in `a/s` is not confused with the normal use of `/` as an attribute separator.

Note also that X.400 is limited in the characters that are allowed in attribute values to the characters defined as members of the “printable string” set. Characters that are used in RFC 822 (Internet) addresses but not allowed by X.400 are specified by multi-character substitutions in accordance with RFC 2156. These are particularly useful when X.400 originators need to specify a complete RFC 822 address in a `DD.RFC-822` domain-defined attribute. The substitutions are listed in Table 1-4.

Table 1-4 RFC 2156 Printablestring Character Substitutions ORname in Fields

Desired character	X.400 multi-character
@	(a)
%	(p)
!	(b)
"	(q)

Table 1-4 (Cont.) RFC 2156 Printablestring Character Substitutions ORname in Fields

Desired character	X.400 multi-character
-	(u)
((l)
)	(r)

For example, to specify the RFC 822 address `jd@e.com` using the DD.RFC-822 attribute, the "@" must be specified as "(a)":

```
DD.RFC-822 = jdoe(a)example.com
```

Note: Since the (and) characters delimit comments in RFC 822 addresses, the use of printable string substitutions imposes the additional requirement that any address containing them must be enclosed in double-quotes. For example:

```
"/dd.rfc-822=astro(a)pound.com/prmd=Gwy/admd=In/c=us/"@x400.example.com
```

Here, the double quotes are required to prevent the "(a)" from being discarded by the RFC 822 address processor through which this X.400 address is sent.

1.4 Sending FAXes

If your site has installed the optional PMDF-FAX product then you might be allowed to send FAXes.

You send a FAX just like you would any other mail message except that you use one of two special addressing formats. You do not need to supply a cover page; it will automatically be generated for you.

The special FAX addressing formats may not be required. If you use VMS MAIL, PMDF MAIL, or DECwindows MAIL, then you can simply specify the address IN%FAX-FORM (simply FAX-FORM from PMDF MAIL). In response to that address, a pop-up FAX addressing form will appear. You merely need to fill in the blank labeled "FAX telephone number", press CTRL/Z, and your FAX address has been constructed for you. You can fill in some of the other blanks if you want; they specify optional information which, when supplied, will appear on the cover page of your FAX (*e.g.*, the recipient's name, telephone number, address, *etc.*).

After your FAX has been sent, PMDF-FAX will send you, via e-mail, an acknowledgement. Your system manager could have also configured PMDF-FAX to periodically send you status reports detailing the status of your FAX.

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1.4.1 Pop-Up Addressing Form

As described in Section 1.4, the pop-up form is invoked by the special address `IN%FAX-FORM` (FAX-FORM from PMDF MAIL). The form is self-explanatory. Fill in the appropriate fields. Once you have finished entering the addresses, enter `CTRL/Z` or, if you are using DECwindows MAIL, click on the form's SEND button. (Note that from DECwindows MAIL, the form will not appear until you click on the mail create window's SEND button to send your message.)

Normally, you will ignore the last four blank lines on the form (Initialization file, Transmit after, Access code, and Alias name). However, the last one, Alias name, can be very useful. If you will often be sending FAXes to a certain address, then you can save that address in your personal alias database which is a phone book of sorts. To do this, pick a name to associate with the address and then enter that name on the Alias name line. Then, when you press `CTRL/Z` (or click on the SEND button), the address will be saved under that name in your personal alias database. In the future, you can send FAXes to that address by merely citing the name—there is no need to call up the form.

For example, suppose the pop-up form appears as shown in Figure 1–1. When you press `CTRL/Z`, the message will be sent as a FAX to `jdoe`, and the address will be saved under the name `MRO-FAX`. In the future you can use the address `IN%MRO-FAX` to send additional FAXes to `jdoe`. Note that the form will not appear when you specify `IN%MRO-FAX`.

Figure 1–1 Saving a FAX Address With the Pop-Up Addressing Form

```
FAX gateway address: fax@example.com
FAX telephone number: 1 508 555 1212
  Recipient's name: JDoe
  Telephone number: (508) 555-1212
    Address: Example Company

Initialization file:
  Transmit after:
    Access code:
      Alias name: MRO-FAX
```

You can also call up FAX addresses stored in your personal alias database with the pop-up form. Merely enter the name of a stored address on the Alias name line and then press the SELECT or FIND keypad key (FIND ALIAS button of the DECwindows MAIL pop-up form). The address will then appear in the form. You can then edit it and resave it under the same or a different name.

See the PMDF DB documentation, Section 9.3, for further information on the personal alias database. You can even declare, with PMDF DB, addresses which you save to be public so that other users can use them too, or so that you can use them yourself from other computers.

1.4.2 FAX Addressing Formats

As mentioned in the previous section, there are two addressing formats which you can use to send a FAX. Again, keep in mind that you might not need to learn these formats: it might be possible for you to use the pop-up FAX addressing forms.

The first addressing format is simply

fax-number@fax-domain

where *fax-number* is the FAX telephone number to dial (e.g., 17145551212), and *fax-domain* is a special domain name which directs your message to PMDF-FAX. This name was chosen by your system manager when PMDF-FAX was installed; contact your system manager to obtain the domain name which you should use. A sample FAX address in this format is

1-508-555-1212@fax.example.com

Do not include any characters other than “-”, “+”, “.”, and the numerals 0–9 in the *fax-number* without also enclosing it in double quotes:

"+1 714 555 1212"@fax.example.com

The second format is more elaborate and allows you to specify optional information which can appear on the cover page. The appearance of a FAX address in this second format is

"/attribute1=value1/attribute2=value2/.../"@fax-domain

Some of the legal attributes and associated values are given in Table 1–5.

Table 1–5 PMDF-FAX Addressing Attributes

Attribute name	Usage
AFTER	Transmit the FAX after the specified time; time must be specified in OpenVMS's standard date/time format
AT	Recipient's name
AUTH	Authorization or access code
COVER	Cover page to use
O	Recipient's organization or company
OU	Recipient's organizational unit or department
FN	Recipient's FAX telephone number
SETUP	Setup file or module to use
SFN	Your FAX telephone number
STN	Your telephone number
TN	Recipient's telephone number

A sample FAX address in this format is

"/FN=1-508-555-1212/AT=Mrocheck/TN=(800) 555-1212/"@fax.example.com

The only mandatory attribute is the telephone number for the destination FAX device, FN. All other information about the recipient is optional. More than one FN item can appear in a single address; each FAX telephone number so specified will be

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tried until the FAX is successfully transmitted. Also, up to four OU attributes can be specified.

The time specified with an AFTER attribute must conform to the OpenVMS date-time specification standards. For instance, "/AFTER=11-NOV-2012 22:00:00" specifies that the FAX is to be delivered to the specified recipient after 10:00 PM on November 11, 2012.

1.4.3 Sample FAX Addresses

The following are examples of possibly legal FAX addresses as they would be specified to VMS MAIL or DECwindows MAIL.

```
IN%"1-508-555-1212@fax.example.com"  
IN%"/FN=1-508-555-1212/AT=Sue Beebe/TN=(508)555-1212/'@fax.example.com"  
IN%"/FN=(508)555-1212/AT=John Doe/O=Example/'@fax.example.com"  
IN%"/O=Party Line/OU=Tech Support/FN=8005551212/'@fax.example.com"
```

From PMDF MAIL and other user agents which can accept ordinary RFC 822 style addresses, these addresses would be specified as follows:

```
1-508-555-1212@fax.example.com  
"/FN=1-508-555-1212/AT=Sue Beebe/TN=(508)555-1212/"@fax.example.com  
"/FN=(508)555-1212/John Doe/O=Example/"@fax.example.com  
"/O=Party Line/OU=Tech Support/FN=8005551212/"@fax.example.com
```

The only difference being that the IN%" " wrapper has been removed and interior single quotes, ', changed to double quotes, ".

1.4.4 Default FAX Attributes

Some of the optional attributes shown in Table 1-5 supply information about you as opposed to the recipient of your FAX (*e.g.*, AUTH, SFN, STN). To avoid the need to re-enter that information every time you send a FAX, you can define the PMDF_X_FAX_DEFAULTS logical. Then, every time you send mail with PMDF MAIL, PMDF SEND, VMS MAIL, or DECwindows MAIL, this logical will be seen and used to construct an X-FAX-defaults: header line. PMDF-FAX will use this header line to determine default values for attributes which do not appear explicitly in the FAX addresses presented to it.

The PMDF_X_FAX_DEFAULTS logical should be defined as follows

```
$ DEFINE PMDF_X_FAX_DEFAULTS "/attribute1=value1/.../"
```

For example, the definition

```
$ DEFINE PMDF_X_FAX_DEFAULTS "/SFN=(714)555-1212/STN=(714)555-1212/"
```

will cause /SFN=(714)555-1212/STN=(714)555-1212/ to be added to all FAX addresses which you generate, either by hand or with the pop-up FAX addressing form. If the

address you supply already has /SFN=... specified, then the default /SFN=... will not be added. Likewise for the /STN=... default.

See Section 1.1.9 for general information on the use of logical names to specify message header lines.

1.4.5 Altering the Page Layout

When the X-PS-qualifiers: header line is present in a mail message sent to PMDF-FAX, its content is interpreted as a list of command qualifiers for the PMDF PS utility and is passed to the PS utility as such when the message body is processed. Only legal PS command qualifiers can appear in this header line; see the PS utility documentation for a list of legal qualifiers. For example, the header line

```
X-PS-qualifiers: /LEFT_MARGIN=36/LANDSCAPE/COLUMNS=2/LINES=50/CALCULATE
```

will cause PMDF-FAX to typeset the message with the left margin 36 points wide (1/2 inch) and produce two 50 line columns of text per page at an appropriate font size. The message will be displayed in “landscape mode” in which the lines of text would run along the long dimension of the page.

If you use PMDF MAIL, PMDF SEND, VMS MAIL, or DECwindows MAIL, you can control the contents of the X-PS-qualifiers: header line with the PMDF_X_PS_QUALIFIERS logical; its translation value at the time the e-mail message is generated is used to form the contents of that header line. See Section 1.1.9 for general information on the use of logical names to specify message header lines.

You can use the PMDF PS utility's /MAIL qualifier to properly set the PMDF_X_PS_QUALIFIERS process logical. Setting the logical this way ensures that only legal qualifiers are placed in the X-PS-qualifiers: header line. See the PS utility documentation in Chapter 9.

1.5 Accessing CCSO, ph, qi, & Gopher Directories

CCSO directories provide a means of looking up mail addresses for other users at your site.^b If your system manager has configured PMDF to use a CCSO directory, then you can use PMDF's pop-up CCSO addressing form to look up addresses from within PMDF MAIL, VMS MAIL, or DECwindows MAIL.^c

^b CCSO directories are sometimes referred to as ph, qi, or gopher directories. If your site uses an LDAP directory or X.500 directory, then see Section 1.6.

^c From PMDF MAIL and VMS MAIL, the form only supports VT-style terminals and other terminals supported by the SMG\$ run-time library.

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Accessing CCSO, ph, qi, & Gopher Directories

1.5.1 Invoking the Form

You invoke the form from within PMDF MAIL by specifying the address PH-FORM at the To:, Cc:, or Bcc: prompt. From within VMS MAIL or DECwindows MAIL specify the address IN%PH-FORM at the To: or Cc: prompt. Note that from within DECwindows MAIL, the form will not appear until after you click on the SEND button in the "mail create" window.

Conventional addresses can be given along with a request to invoke the form; *e.g.*, mail sent to the addresses

```
in%"bob@example.com", in%ph-form, in%"jdoe@example.com"
```

will be sent to bob@example.com, jdoe@example.com, and whatever addresses are selected with the form.

1.5.2 Looking Up Addresses

The pop-up CCSO addressing form is largely self-documenting. Online help can be obtained using the HELP key or by entering CTRL/G. The cursor keys are used to move from field to field or within fields; the currently active field is highlighted and a description of the field shown towards the bottom of the screen.

Use the FIND key to search for a directory entry matching the information supplied to the form. If any matches are found, a selection menu will be presented from which to choose the desired match. While in a selection menu, the question mark key, ?, can be used to request detailed information on the currently highlighted menu entry.

When a selection has been made from the CCSO database, the form constructs an e-mail address for the selected entry. When you exit the form with CTRL/Z, the e-mail addresses for any selections you have made will be fed to your user agent and used to address your mail message.

1.5.3 Changing Your Directory Entry

From the pop-up form, you can change your directory entry's e-mail address or password. First, locate yourself in the directory. Then press the INSERT HERE key or type CTRL/O. You will be prompted for your directory password. Be sure to supply your directory password and not your OpenVMS account password. (Contact your directory manager if you do not know your directory password.) If the password matches that of your entry, then you can proceed to change your e-mail address, directory password, or both. You will be prompted for a new e-mail address and a new password. Simply press ENTER to either of the prompts to avoid changing the associated item. Once the requested information has been supplied, your entry will be changed.

1.6 Accessing LDAP or X.500 Directories

LDAP and X.500 directories provide a means of looking up mail addresses for other users at your site.^d If your system manager has configured PMDF to use an LDAP or X.500 directory, then you can use PMDF's pop-up LDAP/X.500 addressing form to look up addresses from within PMDF MAIL or VMS MAIL.^e

1.6.1 Invoking the Form

You invoke the form from within PMDF MAIL by specifying the address X500-FORM at the To:, Cc:, or Bcc: prompt. From within VMS MAIL specify the address IN%X500-FORM at the To: or Cc: prompt.

Conventional addresses can be given along with a request to invoke the form; *e.g.*, mail sent to the addresses

```
in%"sue@stateu.edu", in%x500-form
```

will be sent to sue@stateu.edu and whatever addresses are selected with the form.

1.6.2 Operation of the LDAP/X.500 Pop-Up Form

The LDAP/X.500 pop-up form is largely self documenting. Online help can be obtained using the HELP key or by entering CTRL/G. The cursor keys are used to move from field to field or within fields; when each field is entered it is highlighted and a description of the field shown towards the bottom of the screen.

Use the FIND key to search for a directory entry matching the information supplied with the form. If any matches are found, a selection menu will be presented from which to choose the desired matches. If the currently selected form field is blank when the FIND key is pressed then all possible choices for that field will be presented. While in a selection menu, the question mark key, ?, can be used to request detailed information on the currently highlighted menu entry.

Note that only the information from the current field and any more general fields will be considered in the search. Thus, if FIND is entered while the State field—the second most general field—is highlighted, then only information from the State and Country field will be used in the directory search. The ordering, from least to most specific, is Country, State, Locality, Organization, Department, and Name.

^d If your site uses a CCSO, qi, ph, or gopher directory, then see Section 1.5.

^e From PMDF MAIL and VMS MAIL, the form only supports VT-style terminals and other terminals supported by the SMG\$ run-time library.

1.6.3 Changing Your Directory Entry

With the terminal-based form, you can change your directory entry's e-mail address or password. First, locate yourself in the directory. Then press the INSERT HERE key or type CTRL/O. You will be prompted for your directory password. Be sure to supply your directory password and not your VMS account password. (Contact your directory manager if you do not know your directory password.) If the password matches that of your entry, then you can proceed to change your e-mail address, directory password, or both. You will be prompted for a new e-mail address and a new password. Simply press ENTER to either of the prompts to avoid changing the associated item. Once the requested information has been supplied, your entry will be changed.^f

1.6.4 Running the Terminal-Based Form as a Standalone Application

The terminal-based LDAP/X.500 pop-up form can be run as a standalone application by issuing the command

```
$ PMDF DIRECTORY/BROWSE/INTERFACE=CHARACTER_CELL
```

^f Technically speaking, the form binds itself to the LDAP server using the supplied password and the distinguished name associated with the currently selected directory entry. It then initiates a modify operation for one or both of the rfc822MailAddress or userPassword attributes of the currently selected entry. The operation will fail if the acl for the target entry does not permit such changes by the entry itself.

2 Receiving Mail Messages

Ordinarily, PMDF will deliver your new mail messages to your VMS MAIL mailbox. There are three common exceptions to this: (1) you use ALL-IN-1 MAIL or A1MAIL, (2) you have a PMDF MessageStore or PMDF popstore account, or (3) you have your mail forwarded elsewhere. ALL-IN-1 and A1MAIL users should refer to Section 2.2; PMDF MessageStore or PMDF popstore users should refer to Chapter 10; and in the case of forwarding, (3), your mail will be forwarded as per your forwarding instructions (see Section 1.1.7).

The DELIVER facility, which can be used to automatically screen your incoming mail messages, is described in Chapter 5.

2.1 Receiving Mail in VMS MAIL

New messages delivered by PMDF to your mailbox can be read with a variety of programs including PMDF MAIL, Gold-Mail, VMS MAIL, DECwindows MAIL, the Pathworks MAIL agents, *etc.* You read these messages as you would any other mail message; no special action is required. Messages delivered by PMDF will have valid From: addresses and can be replied to with the standard REPLY commands.

2.1.1 Receiving Binary Files

For information on receiving binary files, please consult Section 1.1.8. Also, refer to the description of PMDF MAIL's EXTRACT command in Chapter 8.

2.1.2 Header Lines in Received Messages

There are a large number of fields which can appear in the header of a message. These include familiar things like From:, To:, Subject:, and Return-Path: and obscure things like Encrypted:, Resent-Message-ID:, and Resent-reply-to:. VMS MAIL only provides for From:, To:, Cc:, and Subject: information in its message headers. This leaves PMDF with two choices: either discard header lines that do not correspond to VMS MAIL header lines, or insert them somewhere in the body of the message. Neither choice is completely satisfactory — deleting header lines causes the loss of valuable information but inserting header lines into the message text interferes with the proper operation of VMS MAIL's EXTRACT/NOHEADER command.¹ PMDF, unless

¹ Please note that this is not an issue with PMDF MAIL; PMDF MAIL properly handles the EXTRACT/NOHEADER command.

Receiving Mail Messages

Receiving Mail in VMS MAIL

configured otherwise by the system manager, uses the latter approach: PMDF preserves additional header lines by merging them into the text of the message.

The addresses which appear in the VMS MAIL `From:`, `To:`, and `cc:` header lines are not necessarily the same as those which appear in the original message's header. The reason for this is that RFC 822 headers can specify several different types of `From:`, `To:`, and `Cc:` addresses. PMDF has to choose the addresses which best suit VMS MAIL's usage of the VMS MAIL `From:`, `To:`, and `Cc:` header lines. The selection criteria used by PMDF are described below; whether or not PMDF considers Resent- headers when constructing the VMS MAIL headers is configurable by the system manager. Regardless of the addresses chosen, each address will be converted from RFC 822 format to VMS MAIL format (*e.g.*, `IN%"address"`) before being given to VMS MAIL. Doing this allows `REPLY` commands in VMS MAIL to work correctly. (Also, "reply-to-all" type commands such as those in the PathWorks MAIL programs, will work correctly.) Note that when you use PMDF MAIL, you work with the actual RFC 822 header and not the VMS MAIL header which is merely a distillation of the RFC 822 header.

From:

For the VMS MAIL `From:` header line PMDF tries to use the RFC 822 header line from the original message header that is most likely to contain the address that replies should be directed to. The headers lines that are uses, in order of decreasing precedence, are:

1. Resent-Reply-To: (if present and PMDF is configured to use Resent- headers)
2. Resent-From: (if present and PMDF is configured to use Resent- headers)
3. Reply-To: (if present)
4. From: (if present)
5. Resent-Sender: (if present and PMDF is configured to use Resent- headers)
6. Sender: (if present)
7. envelope return address (always present)

To:

For the VMS MAIL `To:` header line PMDF tries to use the RFC 822 header line from the original message header that is most likely to indicate who this version of the message was sent to. The fields that are used, in order of decreasing precedence, are:

1. Resent-To: (if present and PMDF is configured to use Resent- headers)
2. To: (if present)

If neither a `Resent-To:` or `To:` header line is present, then the VMS MAIL `To:` line will be left blank.

cc:

For the VMS MAIL `cc:` header line PMDF tries to use the RFC 822 header line from the message header that is most likely to indicate who the most recent cc: recipients of the message were. The fields that are used, in order of decreasing precedence, are:

1. Resent-cc: (if present and PMDF is configured to use Resent- headers)
2. cc: (if present)

If neither a `Resent-cc:` or `cc:` header line is present, then the VMS MAIL `cc:` line will be left blank.

Subject:

The VMS MAIL `Subject:` line is copied verbatim out of the original RFC 822 message header. If no `Subject:` line is present, the VMS MAIL `Subject:` line is left blank.

2.2 Receiving Messages With ALL-IN-1 and A1MAIL

Messages addressed to ALL-IN-1 or A1MAIL users will be received in the appropriate ALL-IN-1 or A1MAIL mailbox for that user. Messages received will have valid FROM: addresses and can be answered with standard ANSWER or REPLY commands.

2.3 Subaddresses

You can include extra information in your mail address. This extra information is referred to as “subaddress”. Any material following a plus, +, in your address is considered to be a subaddress. For instance, test in the address bob+test@example.com is a subaddress.

Subaddresses do not in any way hinder your mail from being delivered to you. If your address is bob@example.com, then messages sent to bob+test@example.com will be delivered to you just as messages to bob@example.com would be.

So what use are subaddresses? One common use of subaddresses is to track where mail is coming from. Let us again assume that your mail address is bob@example.com. Now, if you subscribe to the info-vax mailing list using the address bob+info-vax@example.com, then mail to you from that list will show that subaddress somewhere in the message header. Indeed, whenever you get mail addressed to the subaddress info-vax, then you know that the mail came from that list. You can use this to advantage with mail screening utilities such as the DELIVER system described in Chapter 5.

If you enter the subaddress into your personal alias database as a public alias then you can have mail sent to you with that subaddress automatically forwarded. Continuing with the bob+info-vax example, the PMDF DB commands

```
db> add info-vax bob@naplesa.example.com
db> set info-vax public
```

will cause mail sent to bob+info-vax@example.com to be forwarded to bob@naples.example.com. The subaddress could have been retained with the command

```
db> add info-vax bob+info-vax@naples.example.com
```

The PMDF DB utility is described in Section 9.3.

Finally, subaddresses can serve as simple visual cues to inform you about where a message originated. You can elect to always include a subaddress in your address when you tell it to other people. It is then possible to figure out where a message came from just by what subaddress your TO: address shows.

3 Message Filtering, Message Forwarding, and Vacation Notices

A common goal is to filter incoming messages, perhaps sending an automatic response, forwarding the messages to another account, or automatically rejecting or discarding some based upon material in the messages' headers or bodies. One way to do this is via the `DELIVER` facility discussed in Chapter 5.

If your messages are delivered to the native message store (VMS MAIL mailbox) or to a PMDF popstore or PMDF MessageStore account, your system administrators may have chosen to enable another option: PMDF message filtering. If your system administrators have chosen to enable it, PMDF provides a web-based interface through which you can specify a vacation notice, specify a forwarding address, and construct and manage your own message screening rules. These are collectively known as *mailbox filters*.

3.1 Mailbox Filter File

By default, you have no mailbox filters unless your system administrator has chosen to set them for you. If mailbox filtering has been enabled for your account, when you use the web-based interface, a mailbox filter is created for you. Your mailbox filters are stored in a mailbox filter file. The location of that file is site-configurable. For popstore and MessageStore accounts, that location is normally in a directory that is not directly accessible by non-privileged users, and all modifications to your mailbox filters are done using the web interface. For VMS MAIL mailboxes, the filter file normally is in your login directory, and therefore accessible by you.

If the mailbox filter file is accessible by you, you may create or modify the filter file using any text editor. The mailbox filter file is a text file containing commands in the SIEVE language with some extensions. See the *System Manager's Guide*, Chapter 16, for information about SIEVE.

Warning: If you edit your mailbox filter file manually, you *cannot* use the web interface any longer. The web interface can only read filter files it has written itself. You can use the web interface to create an initial mailbox filter file, and then edit it manually, but not vice-versa.

3.1.1 Checking Your Changes

Note: After you have made changes to your mailbox filter file, it is important for you to verify that it is working correctly, especially if you have edited it manually. If your filter file is not working, for example if it has a syntax error, your mail delivery could be interrupted.

The easiest way to check your mailbox filter file is to send yourself mail. If your mail gets to your mailbox successfully, then there is nothing wrong with your filter file.

Your filter file can also be verified by your system administrator using the command:

Message Filtering, Message Forwarding, and Vacation Notices

Mailbox Filter File

```
$ pmdf test/rewrite/filter <your-mailbox>
```

3.2 Web Interface

In order to use the web-based interface for setting up message filters, a vacation notice, or a forwarding address, you must have a web client and TCP/IP access to the PMDF system. Your messages must also be delivered to the native message store (VMS mailbox) on the PMDF system, or to a PMDF popstore or PMDF MessageStore account on the PMDF system.

The web form asks you for your e-mail address and your password; you need to provide this information in order to set up or change your mailbox filters.

To connect to the interface with your web browser, you normally open the URL

```
http://host:7633/mailbox_filters/
```

In place of *host*, use the actual IP host name of the system running PMDF, on which your messages are delivered. Your system administrator may have chosen to configure the web interface port to be a port other than 7633; if so, then you need to specify that other port number in place of 7633 in the above URL. Check with your system administrator if you are not sure of the exact URL to use.

Once connected to the introductory web page, links to help and various mailbox filtering activities may be followed.

3.2.1 Web Interface Features

The web interface allows you to set up eight distinct message filters: four to identify messages to always keep, the **Accept filters**; four to identify messages to always throw away, the **Discard filters**. The Accept and Discard filters operate on envelope and header source addresses, header destination addresses, and phrases or words appearing in the Subject: header line or body of the message. The eight filters are thus known by the names Accept From, Accept To, Accept Subject, Accept Body, Discard From, Discard To, Discard Subject, and Discard Body.

The web interface also allows you to set up a forwarding address. When you have a forwarding address set up, all of your mail that you have decided to keep with your Accept filters will be sent to that address instead of being delivered to your local account. Note that the Accept and Discard filters are applied first, and the vacation notice (if any) is also sent first, before the message is forwarded.

The web interface also allows you to set up a vacation notice. Set up a vacation notice when you want to send an automatic reply to mail messages that you receive. The reply notifies the sender that you are on vacation or otherwise away for an extended period of time and may not respond to your mail until you return. The web interface allows you to enable or disable the vacation notice feature, to specify the subject and text that is included in the vacation notice, and to set up some advanced options.

Message Filtering, Message Forwarding, and Vacation Notices

Web Interface

PMDF keeps a history of which addresses it has sent the vacation notice to, and does not send another vacation notice to that same address unless

- you change the text or subject of your vacation notice
- you enable the vacation notice feature after it has been disabled
- the number of days that you specify in the web interface has passed

Note that PMDF will not send the vacation notice if it determines that the message was received through a mailing list.

3.2.2 Example Web Page Displays

The figures below show samples of some of the mailbox filter pages provided by default with PMDF. Note that different web browsers can display pages a bit differently. And your PMDF manager might have customized the mailbox filter web pages for your site.

Figure 3-1 shows a sample Mailbox Filters home page—the first page you will see when you connect to the mailbox filter URL. This home page has links to other pages which implement each of the mailbox filters features: Accept filters, Discard filters, vacation notice, and forwarding address.

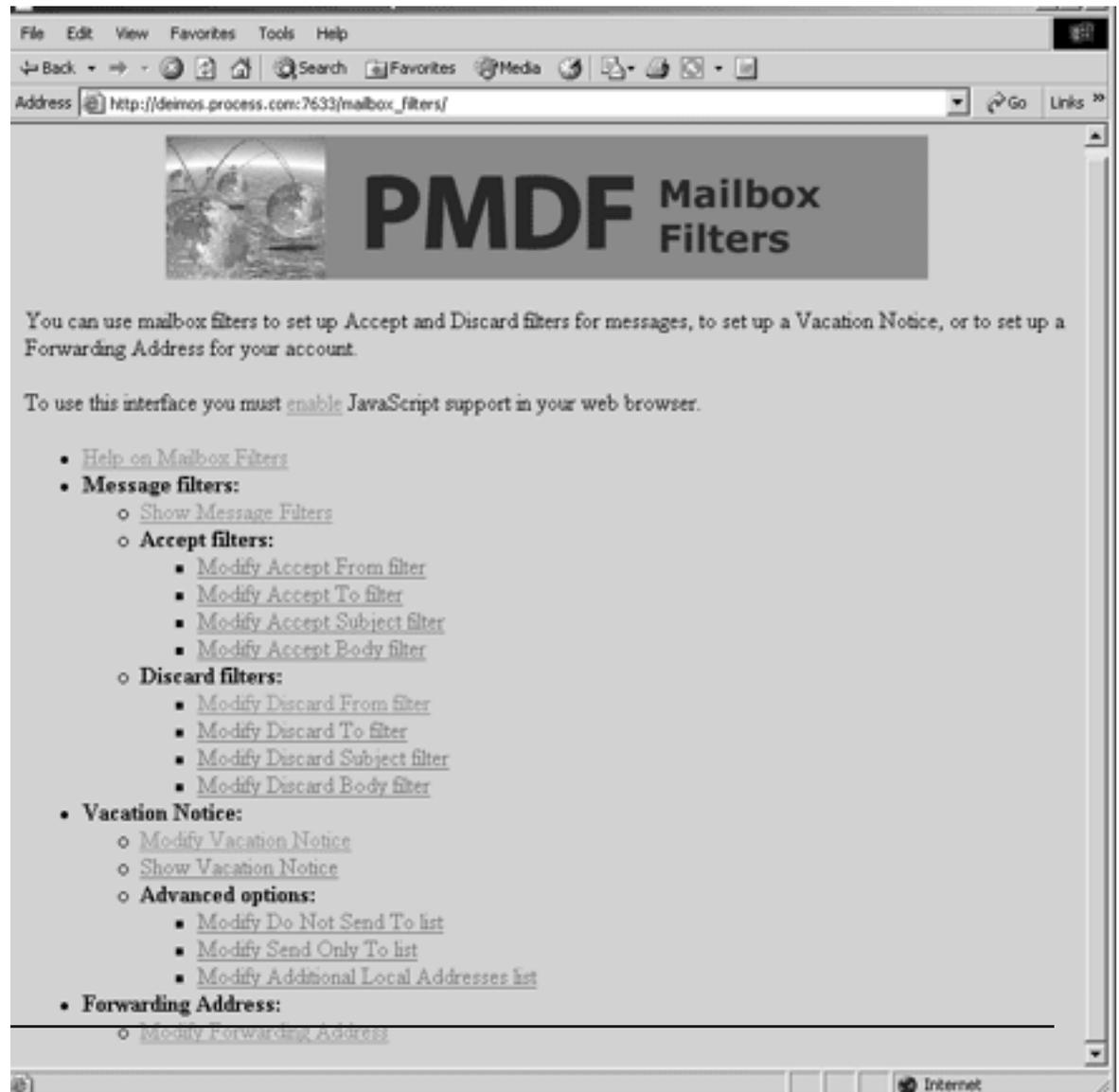
For instance, you can click on the "Modify Discard From filter" link displayed on the mailbox filter home page to move to the `Discard From` filter page, shown in Figure 3-2. (If this is the first page you go to from the mailbox filter home page, note that you will be asked to authenticate yourself before your `Discard From` filter page will be shown; a dialogue box will pop up asking you to provide your e-mail address and password.) The example in Figure 3-2 is for a user who has configured his mailbox filter to reject all messages from `hotmail.com` or `cyberpromo.com`.

As another example, clicking on the "Modify Vacation Notice" link displayed on the mailbox filter home page moves you to the `Vacation Notice` page, shown in Figure 3-3.

Help is available on the various mailbox filtering pages; for instance, clicking on the `Help` button in the lower right corner of the `Discard From` filter page will move you to a help page describing how to use the `Discard From` filters; an excerpt of that help page is shown in Figure 3-4.

Message Filtering, Message Forwarding, and Vacation Notices Web Interface

Figure 3–1 Mailbox Filter Home Page



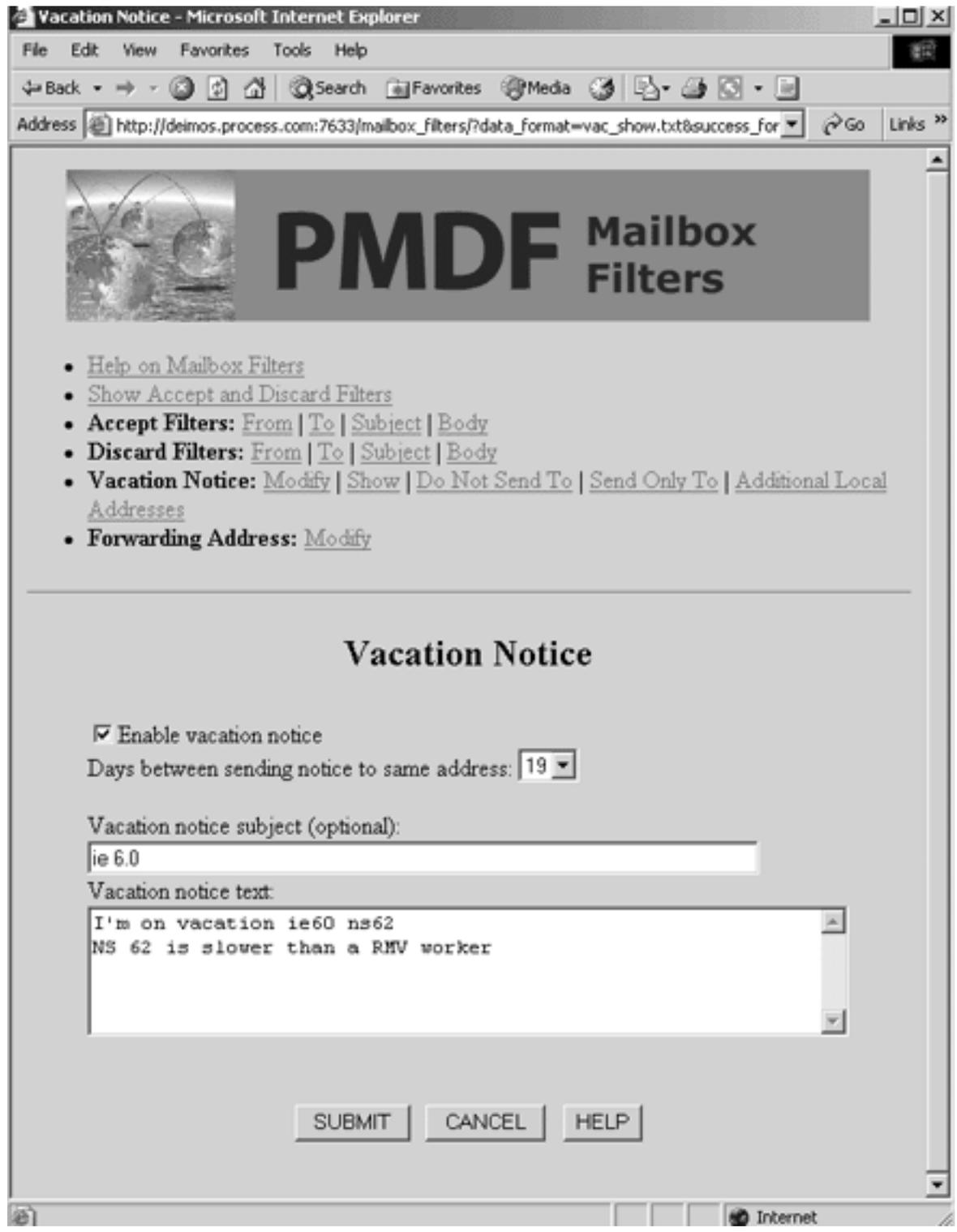
Message Filtering, Message Forwarding, and Vacation Notices Web Interface

Figure 3-2 Discard From Filter



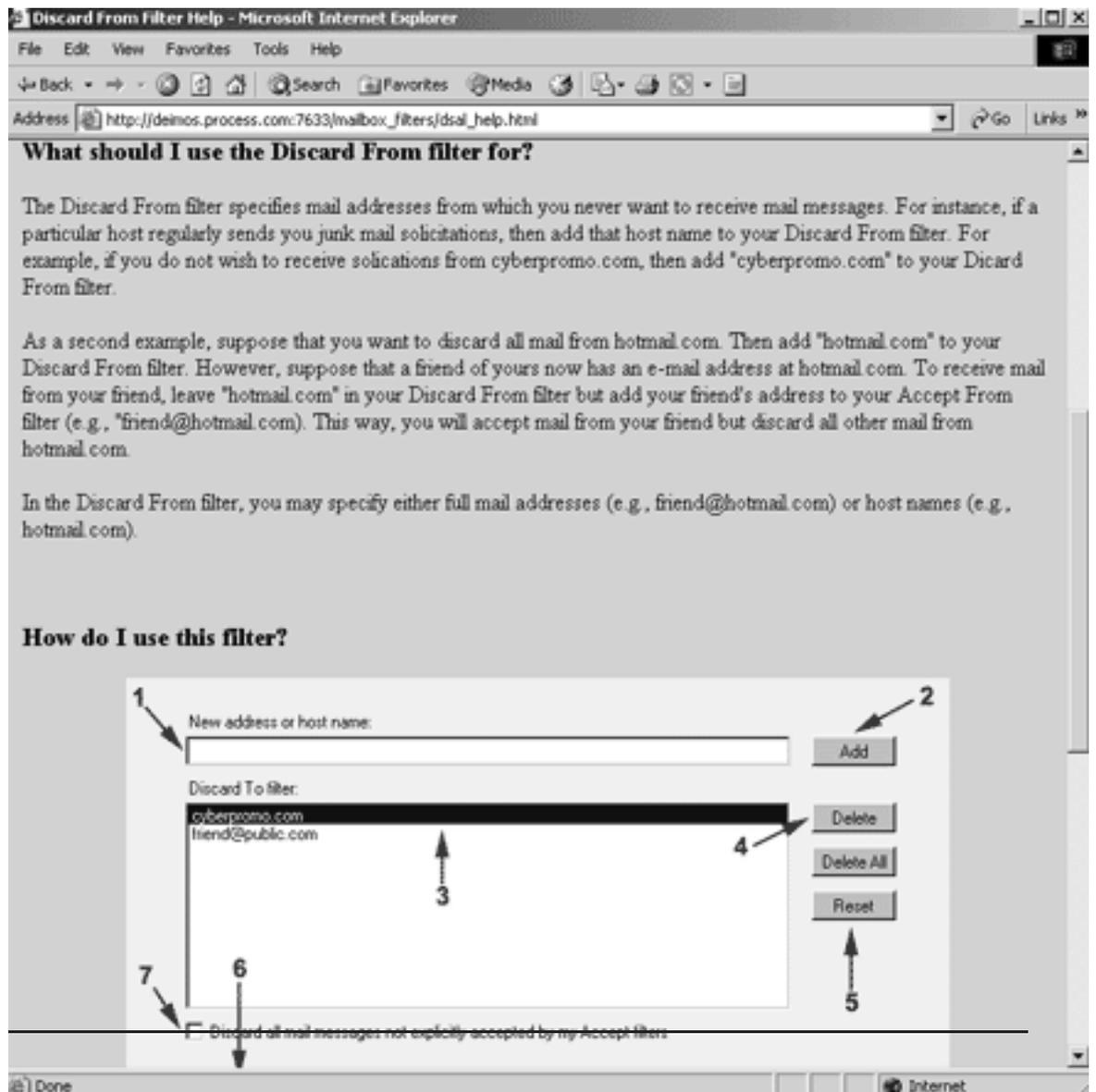
Message Filtering, Message Forwarding, and Vacation Notices Web Interface

Figure 3-3 Vacation Notice



Message Filtering, Message Forwarding, and Vacation Notices Web Interface

Figure 3-4 Excerpt of the Discard From Filter Help Page



4 Password Change Utility

If your system administrators have chosen to enable it, PMDF provides a web-based interface through which you can change the password on your account. This applies to all accounts, whether they are native message store (VMS MAIL mailbox) accounts, or popstore accounts, or MessageStore accounts, or if your username and password is located elsewhere for example in the PMDF password database.

To use the web-based password change utility, you must have a web client and TCP/IP access to the PMDF system. To connect to the interface with your web browser, you normally open the URL:

```
http://host:7633/chng_pwd
```

In place of *host*, use the actual IP host name of the system running PMDF. Your system administrator may have chosen to configure the web interface port to be a port other than 7633; if so, then you need to specify that other port number in place of 7633 in the above URL. Check with your system administrator if you are not sure of the exact URL to use.

Once connected to the web page, you must fill in your username and the string that you want to change your password to. Make sure that you type the new password in twice, correctly, for verification. When you click on the "Change Password" button, your web browser will prompt you to enter your username and existing password. Type these in to authenticate yourself. PMDF will then modify your password as requested.

5 The DELIVER Message Delivery System

DELIVER screens and automatically processes your incoming mail based on guidelines that you provide. Different actions can be taken based on a message's envelope or header addresses, subject, or content. These actions include delivering the message, filing the message away, forwarding the message, or even invoking a DCL command procedure to perform complex processing. Any actions taken occur immediately upon receipt of each message; you do not need to be logged in at the time a message is received in order for actions to be taken on your behalf.

DELIVER is modelled after the MAILDELIVERY facility of the MMDF mail system. DELIVER is, however, completely distinct from MMDF and the formats of .MAILDELIVERY files for MMDF and MAIL.DELIVERY files for DELIVER are dissimilar.

5.1 Setting Up DELIVER

In order to use DELIVER, you must first take two steps:

1. Create a MAIL.DELIVERY file in your default login directory. For security reasons this file *must* be located in your default login directory — it cannot be stored elsewhere. The format of a MAIL.DELIVERY file is described in Section 5.2.¹

This first step is all that is required to cause DELIVER to process mail delivered to you by PMDF. That is, the presence of a MAIL.DELIVERY file is all that is required to activate DELIVER for messages you receive via PMDF.

2. Set your mail forwarding address to "IN%" "~username" "" (OpenVMS 7.0 or earlier) or to IN%"~username" (OpenVMS 7.1 or later) where *username* is your username. See Section 1.1.7 for further information on using the SET FORWARD command.²

This step is required to cause DELIVER to process mail you receive in your VMS MAIL mailbox by means other than PMDF.

Once these two steps have been taken, DELIVER will be invoked automatically to handle all mail as it is delivered to you. For example, suppose the user BOB on an OpenVMS 7.0 system wants to have DELIVER process his incoming messages. BOB should create a MAIL.DELIVERY file in his login directory and then set his forwarding address,

```
$ MAIL
MAIL> SET FORWARD "IN%"~BOB""
MAIL> EXIT
$
```

¹ Note that the system manager can use the PMDF option MAIL_DELIVERY_FILENAME to change the name of the MAIL.DELIVERY file. In addition, system managers can also use the PMDF option USE_MAIL_DELIVERY to completely disable DELIVER.

² The tilde, ~, in the forwarding address is equivalent to a leading underscore as far as VMS MAIL is concerned but will not avoid DELIVER processing. It does, however, avoid alias processing.

The DELIVER Message Delivery System

Setting Up DELIVER

5.2 MAIL.DELIVERY File format

The MAIL.DELIVERY file controls DELIVER and tells it how to handle each incoming message. A MAIL.DELIVERY file consists of a series of directives with one directive on each line of the file. Each directive specifies how a certain kind of message is to be handled. A particular directive may or may not apply to a given message. An attempt is made to apply every directive in the MAIL.DELIVERY file to each message, thus more than one directive may apply to (and more than one action may be the result of) a single message.

Any line in the file which begins with a semicolon or an exclamation point is considered to be a comment and is ignored.

A directive line consists of the following items in order from left to right:

1-pattern 2-pattern 3-pattern accept action 1-parameter 2-parameter

Items must be delimited by one or more spaces or tabs. Quoted strings (use double quotes, not single quotes) are allowed as single items; the quotes are removed from the items as they are read. A double quote can be obtained by using two double quotes with no space between them. This form of quote handling is consistent with that of OpenVMS DCL.

The *1-parameter* and *2-parameter* items are both optional and can be omitted if the action *action* requires no parameters. The first five items are mandatory and must appear in every directive line.

5.2.1 Directive Applicability

The *1-pattern*, *2-pattern*, *3-pattern*, and *accept* items determine whether or not the directive applies to a particular message. In most cases a string comparison is performed between the patterns *1-pattern*, *2-pattern*, and *3-pattern* and, respectively, the From:, To: and Subject: fields that would be seen in VMS MAIL. Note that these fields *do not* correspond exactly to the RFC 822 header lines of the same name; a complex set of mapping criteria are used to convert the RFC 822 header lines into VMS MAIL headers. See Section 2.1.2 for a complete description of these criteria. Moreover, it is possible to rearrange the strings the patterns are compared against in complex ways using the 1, 2, and 3 actions described in Section 5.2.2.

The comparison is not case sensitive. The usual OpenVMS wildcard characters, * and %, can be used in the patterns. The pattern * will match anything. For partial matches, the pattern * is used to indicate a field that should be ignored.

The default string comparison operations can optionally be replaced with numeric comparisons. This is controlled by the second and third characters in the *accept* item. If present, both the column values and the comparison strings are converted to integer values. The match fails if the conversion fails. A single asterisk in the comparison string disables comparisons for that column completely. Once converted, the *accept* item determines the type of comparison:

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- > Match if comparison string is greater than the column value.
- >= Match if comparison string is greater than or equal to the column value.
- < Match if comparison string is less than the column value.
- <= Match if comparison string is less than or equal to the column value.
- <> Match if comparison string is not equal to the column value.
- = Match if comparison string is equal to the column value.

Once the comparisons, string or numeric, have been performed, the *accept* item determines if the directive should be applied to the message. Only the first two characters of *accept* are significant at this point. The first character should be one of the following:

- A Always apply this directive; ignore the results of the comparisons. Note that this directive does not count as an applied directive (see the O, B, S, and E actions below).
- X Never apply this directive; ignore the results of the comparisons.
- T, Y Apply this directive if the patterns all matched.
- F, N Apply this directive if the patterns did not all match (i.e. some or all failed).
- P Apply this directive if at least one of the patterns matched (i.e. some or all matched). In this case the pattern * is not treated as a match.
- O, ? Apply this directive if the patterns all matched and no previous directive has been applied to the message. Directives that used the A accept item don't count as having been applied. DELIVER can also be told to forget the fact the some directive has been applied by clearing the R flag with the R action.
- B, Q Apply this directive if a pattern did not match and no previous directive has been applied to the message. Directives that used the A accept item don't count as having been applied.
- S Apply this directive if at least one pattern matched and no previous directive has been applied to the message. Directives that used the A accept item don't count as having been applied.
- E This directive applies if all the patterns matched *or* no other directive has been applied so far. Directives that used the A accept item do not count as having been applied.

Any other character is interpreted as an X.

If the second character is an asterisk, *, then the *accept* item is modified in that it does not count as an applied directive. This makes it possible for any *accept* item to be treated like the A item (which never sets the applied flag).

Directives are tested in the order they appear in the MAIL.DELIVERY file.

For example, suppose JIM@EXAMPLE.COM sends a message to BOB@SAMPLE.COM. The subject line of the message is "Re: Mooses". BOB's MAIL.DELIVERY file contains the following lines (the function of the last two columns of each line, the *action* and *1-parameter* items, is described later):

```
"*FRED@SAMPLE.COM*" * *          T Q
"*JIM@EXAMPLE.COM*" * *          T A JIM.LOG
*                               * *mooses* T A MOOSE.LOG
*                               * *          O A OTHER.LOG
*                               * *          A D
```

The first directive does not apply since the message is not from FRED@SAMPLE.COM. The second and third directives both apply since JIM@EXAMPLE.COM is the sender and

The DELIVER Message Delivery System

MAIL.DELIVERY File format

the subject line contains the string “mooses”. The fourth directive’s patterns all match, but a preceding directive has applied, so it does not itself apply. The final directive applies since it would apply to any message. The result is that three directives apply to this message, and thus three separate actions are taken in processing the message.

Note that the patterns “*FRED@SAMPLE.COM*” and “*JIM@EXAMPLE.COM*” are useful since personal name fields and possibly other addresses and source routes can appear in addresses; (e.g., the address FRED@SAMPLE.COM might actually appear as “Fred Smith <fred@sample.com>”). Depending on personal name fields for message handling is not a good idea since some users have a tendency to change personal names frequently and without warning. The use of the leading and trailing asterisks makes the pattern match any string that contains the address, regardless of the context of the address; the result is a MAIL.DELIVERY file which is insensitive to personal names.

If none of the directives in the file are found to apply to and process the message in some way, the message is just delivered normally. (Note, however, that **an empty MAIL.DELIVERY file by default is considered an error**; unless your system manager has configured DELIVER otherwise, your e-mail messages will not be delivered if you have an empty MAIL.DELIVERY file.) The effect of having no matching directives (in a non-empty MAIL.DELIVERY file) is similar to the following directive:

```
* * * A D
```

Note that the J, K, L, M, R, S, 1, 2, and 3 actions are not thought of as having “processed” the message and hence do not block the application of this default.

5.2.2 Actions

The *action* and *1-parameter* items specify what action is taken when a directive is applied to a message. The first character of *action* specifies what type of action to take. The legal characters for *action* and what they do are:

A

Append the body (or contents) of the message to a file. The message header is not included. The *1-parameter* item specifies the file name. The file need not already exist; if necessary, it will be created. The recipient must have write access to the file, if it exists, and write access to its directory if it needs to be created; DELIVER grants the user no special file access privileges.

B

Same as D but with the message headers appearing at the bottom of any messages delivered to VMS MAIL. PMDF’s FOLDER utility is used to deliver the mail.

C

Copy the body of the message to a file whose name is *1-parameter*. Write access to the directory where the file is to be created is required.

D, V

Deliver the message normally to VMS MAIL. *1-parameter* is the name of the folder the message is to be placed in. If *1-parameter* is omitted the message is placed in the VMS MAIL’s NEWMAIL folder by default. Delivery to VMS MAIL’s NEWMAIL is done

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directly by PMDF; delivery to other folders is done using the FOLDER utility. The V action is identical to the D action; it is retained for compatibility with earlier versions of DELIVER.

If an additional parameter, *2-parameter*, is specified, then that additional parameter will be interpreted as the name of the mail file to use in the case of VMS MAIL delivery. The user's default mail file and default directory are used if *2-parameter* is not specified.

The following example shows an action that delivers to the NEWMAIL folder in an alternate mail file:

```
* "+gripes*" * T D NEWMAIL GRIPES.MAI
```

E

Execute the specified command. The DCL command specified by *1-parameter* is executed. The command is executed in the environment of the recipient's own account. Any noninteractive DCL command is valid, including an indirect command file specification. The DCL symbols shown in Table 5–1 can be used in the command to facilitate message processing.

Table 5–1 DCL Symbols Available to DELIVER Command Files

Symbol	Equivalence value
FROM	The message's From: address (selected as described in Section 5.2.1)
TO	The message's To: address
SUBJECT	The message's Subject:
CC	The message's cc:
QFROM	From: with quotes doubled (selected as described in Section 5.2.1)
QQFROM	From: with quotes quadrupled (selected as described in Section 5.2.1)
QTO	To: with quotes doubled
QQTO	To: with quotes quadrupled
QSUBJECT	Subject: with quotes doubled
QQSUBJECT	Subject: with quotes quadrupled
QCC	Cc: with quotes doubled
QQCC	Cc: with quotes quadrupled
C1, C2, C3	See S action
QC1, QC2, QC3	See S action
QQC1, QQC2, QQC3	See S action
MESSAGE_FILE	The name of the file containing the body of the message; MESSAGE_FILE always contains a full file path
MESSAGE_HEADER	The name of the file containing the headers of the message; MESSAGE_HEADER always contains a full file path
MESSAGE_DELETE	Initially set to "YES", if this symbol is set to "NO", no attempt will be made to delete MESSAGE_FILE and MESSAGE_HEADER after all actions are complete; the M action sets MESSAGE_DELETE to "NO"

The Q forms are useful if the symbol must be expanded inside a quoted string. The MESSAGE_DELETE flag is useful if MESSAGE_FILE or MESSAGE_HEADER (or both) have to be queued for further processing at a later time, or if one of the actions has already deleted them.

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F, W

Forward the message. The message is forwarded to the address specified by *1-parameter*.

VMS MAIL is used to send the message. As such, the address specified by *1-parameter* must be one that VMS MAIL will accept; PMDF addresses will probably require the use of an `IN%` construct, for instance. A new message header is added; the original header is lost. The new header refers to the forwarding user as the message originator.

H

Append the header and the body (or contents) of the message to a file. One blank line is written between the header and the body. The *1-parameter* item specifies the file name. The file need not already exist: if necessary, it will be created. The recipient must have write access to the file, if it exists, and write access to its directory if it needs to be created; DELIVER grants the user no special file access privileges.

J

Set the batch queue or a queue parameter used to run the command file produced by DELIVER. DELIVER uses the queue DELIVER_BATCH by default; if this queue is not defined or is inaccessible by the message recipient (the owner of the MAIL.DELIVERY file) the queue SYS\$BATCH will be used instead. The J action provides a way to specify an alternate queue and/or a job parameter. If a single *1-parameter* is specified it is the name of the queue. If both *1-parameter* and *2-parameter* are specified the former gives the name of the job parameter to set and the latter gives the value to set the parameter to. Currently the only parameters supported are P1 through P8, which set the corresponding positional job parameter to the string specified in *2-parameter*.

If the queue specified with the J action cannot be used, the DELIVER_BATCH queue or SYS\$BATCH queue will be used instead.

K

Save the command file after execution. Normally the command file created on behalf of the user is deleted automatically after execution. This action, if used, inhibits this automatic deletion.

L

Save the batch log of the DCL commands executed by DELIVER for each message processed in the file *1-parameter* in the user's login directory. This option is useful for debugging MAIL.DELIVERY files and command scripts. If more than one L action is triggered only the last one has any effect.

M

Save the message and header files after execution of the batch job. The message and header files are normally deleted as the last step of processing by the batch job. This action suppresses automatic deletion of these files; the same effect can be obtained by setting the MESSAGE_DELETE flag to NO.

O

Same as D but with the message headers omitted from messages delivered to VMS MAIL. PMDF's FOLDER utility is used to deliver the mail.

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P

Forward the message. The message is forwarded to the address specified by *1-parameter*.

PMDF is used to send the message. As such, the address specified by *1-parameter* should be a standard RFC 822 style address. The original message header is retained and supplemented with additional information describing the forwarder as the sender of the message.

Q

Quit; take no action and abort. If this action is taken DELIVER stops scanning the MAIL.DELIVERY file at this point. No subsequent directives will apply after this one. Use this directive with care; it is very easy to lose messages when this action is employed.

R

Reset specified flag or flags. This action examines its first argument one character at a time and clears any associated flag. Two flags are defined at present. The R flag is set whenever DELIVER finds an applicable directive. This flag is tested by the B, O, Q, S, and ? *accept* items. The A flag is set whenever DELIVER applies some directive that is thought of as having processed the message.

S

Save the current column strings for pattern matching of columns one, two, and three in special DCL column variables C1, C2, and C3, respectively. The DCL variables QC1, QC2, QC3 (quotes doubled), QQC1, QQC2, and QQC3 (quotes quadrupled), are also defined in the same way as the variables FROM, QFROM, and QQFROM are defined.

This action makes it possible to save and act upon the results produced by the 1, 2, and 3 actions in ways that cannot be accommodated by the facilities DELIVER provides directly.

1, 2, 3

Rebuild the strings the DELIVER patterns are matched against. 1 rebuilds the string *1-pattern* is compared with, 2 rebuilds the string *2-pattern* is compared with, and 3 rebuilds the string *3-pattern* is compared with. *1-parameter* is either the keyword RESET or an expression that describes the processing to be applied to the message header to produce the resultant column string. The expression is written in what amounts to a miniature language specialized for just this purpose.

The expression language is very simple; it consists of tokens that describe either atoms (in the spirit of RFC 822) or operators. There are only two types of atoms and four operators.

The simplest form of atom is simply the field-name of a message header. Any possible message header field-name can be specified, including standardized ones like MESSAGE-ID, RESENT-FROM, and REFERENCES and nonstandard ones like X-VMS-CC, ORGANIZATION, and FRUIT-OF-THE-DAY. Any field-name can be specified, including field-names that PMDF does not recognize or use itself.

Two special field-names with special meanings are provided. ENVELOPE-FROM refers to the envelope From: address (which usually, but not always, appears on the Return-path: header) and ENVELOPE-TO refers to the envelope To: address that describes the current message recipient. The latter envelope information usually appears on one

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of the various recipient headers (`To:`, `Resent-To:`, `Bcc:`, etc.), but can be hard to locate in some cases or completely missing in other cases.

The presence of such an atom amounts to a request to extract the text from the header (or possibly headers) that correspond to the specified field-name and use this text as the column string result. If the specified field-name is not used in the message header the atom extracts an empty or null string.

The other sort of atom is simply a quoted string. Single quotes are used instead of double quotes since double quotes usually surround the entire *1-parameter*. The contents of the quoted string are used as the column string. This atom is not useful by itself; it is designed to be used in conjunction with other atoms and operators.

The most straightforward operator is concatenation. Two or more atoms appearing side by side (with only spaces and/or tabs in between) are concatenated to form a composite result.

A comma acts as a special form of concatenation. The expressions on either side are evaluated and concatenated. If the expressions on both sides of the comma produce non-null results, then a comma-space sequence is inserted between them. The comma-space is not inserted if either side produces only an empty string as a result.

A forward slash, `/`, acts as a form of alternation. It will “return” the result of the evaluation of the left hand side if it is not empty, and the result of the right hand side if the left hand side result is null. (The similarity of these operators to those used in RFC 822 is not coincidental.)

An asterisk, `*`, is used as a special modifier to any expression. When it precedes an expression, it requests that the evaluation of any field-name atom return all header lines with the specified field-name concatenated together, rather than simply the first such line. A quoted string atom can be specified directly after the asterisk, and if such a string is specified it is inserted between any concatenated header lines.

Finally, the various operators bind differently. Asterisk binds the tightest (similar to exponentiation in regular mathematical expressions), followed by concatenation, and finally alternation. Parentheses can be used to alter the binding order as needed.

Here are a few examples of *1-parameter* expressions:

```
* * * A 1 "MESSAGE-ID, RESENT-MESSAGE-ID, ALTERNATE-MESSAGE-ID"
```

The `Message-Id:`, `Resent-Message-Id:`, and the (nonstandard) `Alternate-Message-Id:` headers are concatenated with commas inserted between them.

```
* * * A 1 " (RESENT-TO, RESENT-CC, RESENT-BCC) / (TO, CC, BCC) / ENVELOPE-TO"
```

The various `Resent-` recipient headers are concatenated, and if none of them exist the regular set of recipient headers are used instead. If these in turn don't exist the envelope `TO:` address is used (presumably as a last resort).

```
* * * A 1 "*" ' ' RECEIVED"
```

All of the `Received:` headers are concatenated into a single string separated by spaces.

Considerably more complex expressions can be built as the need arises.

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The keyword `RESET` restores the original value of the corresponding column. This would be used after another 1, 2, or 3 directive has modified the string. It is used for example as follows:

```
* * * A 1 RESET
```

5.2.3 Example

For example, suppose that `BOB@SAMPLE.COM` sends `JIM@EXAMPLE.COM` a message. `JIM@EXAMPLE.COM` has the following (rather complex) `MAIL.DELIVERY` file:

```
! Messages with subject "Loopback" are returned to sender
"*JIM@EXAMPLE.COM*"      * "Loopback" T D
*                          * "Loopback" O F ""''F$ELEMENT(0, "" "", QFROM) '""
*                          * "Loopback" T Q
! All other messages are logged
*                          * *                A E @LOGALL.COM
! Just log messages from TERRY@ISI.COM
"*TERRY@ISI.COM*"      * *                T Q
! Just log archive messages from myself
"*JIM@EXAMPLE.COM*"      * "Archives" T Q
! Save messages from BOB@STATEU.COM in a special file
"*BOB@SAMPLE.COM*"      * *                T A BOB.LOG
! Then deliver anything that gets this far
*                          * *                A D
```

`JIM@EXAMPLE.COM`'s `LOGALL.COM` contains the following commands:

```
$ from    == "From:    " + from
$ to      == "To:      " + to
$ subject == "Subject: " + subject
$ open/append/error=make_one x message.log
$ next:
$ write x ""
$ write x from
$ write x to
$ write x subject
$ write x ""
$ close x
$ append 'message_file' message.log
$ exit
$ !
$ make_one:
$ create message.log
$ open/append x message.log
$ goto next
```

Note that a similar effect could be achieved by substituting

```
* * * A H MESSAGE.LOG
```

for

```
* * * A E @LOGALL.COM
```

but would log the entire header rather than a few selected lines.

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If the subject line of BOB@SAMPLE.COM's message is not the string "Loopback", the message will be logged with a header in the file MESSAGE.LOG (located in JIM@EXAMPLE.COM's SYSSLOGIN directory), appended to the file BOB.LOG without any header and delivered to JIM@EXAMPLE.COM's NEWMAIL folder. If subject line is the string "Loopback", JIM@EXAMPLE.COM's MAIL.DELIVERY file will bounce the message right back to BOB@.SAMPLE.COM.

The F\$ELEMENT DCL lexical function is used in this example to eliminate the personal name field from the address, if one is present. Care must be taken to deal with personal name fields attached to VMS MAIL addresses in a proper manner. The approach of using F\$ELEMENT is simple and usually very effective; note that it can fail if the address part of the VMS MAIL header line contains spaces.

As another example, if TERRY@ISI.COM sends a message to JIM@EXAMPLE.COM, the message is logged only in JIM@EXAMPLE.COM's MESSAGE.LOG file; JIM@EXAMPLE.COM never receives any notification that the message arrived. Apparently, TERRY@ISI.COM never says anything of importance to JIM@EXAMPLE.COM.

It is clear that the ability to execute an arbitrary set of DCL commands in response to a message is a very powerful tool. It must, however, be used with care, since processing is initiated whenever a message is received and operates in a completely unattended environment.

5.2.4 Summary of Directives and Actions

Tables 5-2 and 5-3 summarize the directive applicability codes and actions.

Table 5-2 Summary of DELIVER Directive Applicability

Accept Code	Directive applicability
A	Directive always applies
B, Q	Directive only applies if one or more patterns failed to match and no previous directives, except for A, have applied
E	Directive only applies if all patterns matched or no previous directives, except for A, have applied
F, N	Directive only applies if one or more patterns failed to match
O, ?	Directive only applies if all patterns matched and no previous directives, except for A, have applied
P	Directive only applies if one or more patterns matched
S	Directive only applies if one or more patterns matched and no previous directives, except for A, have applied
T, Y	Directive only applies if all patterns matched
X	Directive never applies

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Table 5-3 Summary of DELIVER Actions

Action Code	Parameters	Action taken
A	filename	Append the message body to the specified file
B	folder, filename	Same as D but with the message header appearing at the end of the message
C	filename	Copy the message body to the specified file
D, V	folder, filename	Deliver the message to the specified folder in the specified mail file; if filename not supplied then the default mail file is used
E	command	Execute the specified DCL command
F, W	address	Forward the message with VMS MAIL to the specified address
H	filename	Append the message, header and body, to the specified file
J	queue	Run the DELIVER batch job in the specified batch queue
K	—	Retain the DELIVER processing command file; do not delete it after DELIVER is done running
L	filename	Log DELIVER batch job processing to the specified log file
M	filename	Retain message header and message body files; do not delete them after DELIVER has finished running
O	folder, filename	Same as D but with the message header omitted
P	address	Forward the message with PMDF SEND to the specified address
Q	—	Quit immediately; execute no actions
R	—	Reset specified flags
S	—	Save as DCL symbols the pattern matching strings
1,2,3	—	Rebuild the strings used for pattern matching

5.3 Operation

As it delivers messages to local users PMDF checks to see if the user has a MAIL.DELIVERY file in their default login directory. DELIVER is invoked if this file exists. DELIVER takes the following steps:

1. DELIVER reads and parses the MAIL.DELIVERY file.

By default the message is returned to the sender if any errors occur during the reading and parsing of the MAIL.DELIVERY file. Note that **an empty MAIL.DELIVERY file is considered an error.**

The system administrator can configure DELIVER to change this behavior. If the logical name PMDF_IGNORE_MAIL_DELIVERY_ERRORS is defined /SYSTEM/EXECUTIVE, any errors in the MAIL.DELIVERY file (including an empty file) are ignored. The mail is delivered normally to the user's NEWMAIL folder as if the MAIL.DELIVERY file did not exist.

2. DELIVER writes the headers of the message to a temporary file in the recipient's home directory.

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3. DELIVER writes the body of the message to a temporary file in the recipient's home directory.
4. A command file is constructed to complete the delivery process. This file is also created in the recipient's home directory. The directives previously read from the MAIL.DELIVERY file are compared with the message. Any directives that match will cause commands to be written to the command file that implements the requested action.
5. After the list of directives is exhausted DELIVER checks to see that at least one directive caused an action to be taken. If none did, DELIVER writes to the command file a default action command to deliver the message normally. Commands to delete the message file (unless the MESSAGE_DELETE flag is set to NO by one of the actions) and the command file itself are written to the command file and the command file is closed.
6. The command file is queued to the batch queue specified by the MAIL.DELIVERY file for processing. If the MAIL.DELIVERY files not specify a queue, the DELIVER_BATCH queue will be tried, and if that fails the queue SYS\$BATCH will be used. The file is queued so that it will execute just as if the recipient had submitted it for processing from his or her own account. Once the command file is submitted DELIVER tidies up, deallocating any storage allocated for directive lists, and returns control to PMDF.
DELIVER does not bother to create the batch job if there's no work for it to do.
7. DELIVER passes responsibility for delivery back to PMDF if it was asked to deliver the message to the user's NEWMAIL folder and the requested handling of headers matches the the handling specified by the local channel. This does not preclude other actions using the message in other ways.

5.4 Subaddresses

Subaddresses provide a convenient handle for screening e-mail messages with DELIVER. For a general discussion of subaddresses, refer to Section 2.3.

To screen mail based upon a subaddress, you must use a 1, 2, or 3 action to obtain the envelope `TO:` address associated with the mail message being delivered to you. You cannot use headers since there is no requirement that your address has to appear in the header of messages you receive, either with or without the subaddress. For instance, to detect the subaddress "junk-mail", use the directives

```
* * * T 2 "ENVELOPE-TO"  
* "+junk-mail*" * T D WASTEBASKET
```

The first of these two directives tells DELIVER to use the envelope `TO:` address for 2-pattern. The second directive then causes any messages with `+junk-mail` appearing in the envelope `TO:` address to be filed to your WASTEBASKET folder.

5.5 Limitations

There are no known bugs in PMDF's DELIVER subsystem at this time. However, there are a few minor nuisances which users should be aware of:

1. It is difficult to debug MAIL.DELIVERY files since there is no way to watch deliver process the file except by enabling debug code in DELIVER (which is not an option normal users can exercise). However, the L action can be used to create a log file of the DCL commands DELIVER executes on behalf of the user when processing a message:

```
! Log commands executed in a file unconditionally
* * * A L DELIVER.LOG
* * * A E @DO_SOMETHING.COM
```

Such log files are always placed in the user's home directory. Also note that output from command files invoked by DELIVER can be captured in a file by using the /OUTPUT qualifier:

```
! Execute a command file with logging
* * * A E @DO_SOMETHING.COM/OUTPUT=DO_SOMETHING.LOG
```

DELIVER does watch for users sending messages to themselves and then tries to be somewhat more informative than is usual about any errors it finds in MAIL.DELIVERY files.

2. Much of the line and symbol processing done by DELIVER uses 252 character buffers. In particular, parameters in MAIL.DELIVERY files are limited to a maximum of 252 characters each. Most lines processed by DELIVER are limited to PMDF's usual 1024 character maximum. Lines output to command files are a special case; DELIVER must respect DCL's builtin 256-character line length limit. This might impose even more severe restrictions on symbol assignments and other commands than DELIVER does.

DELIVER silently truncates lines rather than complaining about line lengths.

6 Mail Server Commands

PMDF provides a combined mail and list server, referred to in this document as a “mail server”. Mail servers are used to distribute files via e-mail and allow users to subscribe or unsubscribe from mailing lists. If your system manager has configured a mail server at your site, then you can query the server via e-mail to determine what files and mailing lists are available.

6.1 Sending Commands to the Server

Commands directed to a mail server take the form of a mail message addressed to

```
mailserv@mail-server-host
```

where *mail-server-host* is the host name of the machine running the mail server. You need to obtain this name from your system manager. The text of the message contains mail server commands, one command per line.

For example, suppose the address of a mail server is mailserv@example.com. To obtain a help message from the server as well as a list of the available files and mailing lists, you would send a message much like the one shown in Example 6-1.¹

Example 6-1 Sending Commands to a Mail Server

```
$ MAIL
MAIL> SEND
To:      in%"mailserv@example.com"
Subj:
Enter your message below. Press CTRL/Z when complete, CTRL/C to quit:
HELP
INDEX
LISTS
CTRL/Z
MAIL> EXIT
$
```

After a short while, you will receive back three messages from the mail server: the first message in response to the HELP command, the second in response to the INDEX command, and the third in response to the LISTS command. If your command specifications are in error, then the mail server will send you an error notification.

¹ Note that PMDF mail servers, and many others too, ignore the Subject: line in messages sent to the server. Do not attempt to place commands in the Subject: line; they will be ignored.

Mail Server Commands

Sending Commands to the Server

Typically, mail from the mail server will have a reply address which differs from the address you use to send commands to it. This is intentional and is done to prevent potential mail loops. One consequence of this is that you cannot direct further commands to the server by replying to messages from it. You must always initiate a new message with the send command; you cannot use the reply command.

A brief description of the available commands is given in Table 6–1; complete descriptions begin in Section 6.2. Lines beginning with an exclamation point, !, are interpreted as comment lines.

Table 6–1 Summary of Mail and List Server Commands

Command	Description
CONFIRM	Confirm a command from a previous message
DIRECTORY	Obtain directory listing of available files
DIRECTORY/LIST	Obtain directory listing of available mailing lists
ENCODING	Set default file transmission encoding
END	Terminate processing, accept no additional commands
EXIT (see END)	Same as END
FINISH (see END)	Same as END
HELP	Retrieve the server-specific help information
INDEX	Retrieve the index of available files
LISTS	Retrieve the index of available mailing lists
MAXIMUM	Set maximum message size; large messages will be divided into several messages, each smaller than this size
MODE	Set the default file reading mode
PURGE/LIST ¹	Purge comment lines (such as unsubscribed addresses) from the membership list
QUIT (see END)	Same as END
SEND	Retrieve the specified files
SEND/LIST ¹	Retrieve the membership list for a given mailing list
SEND/LIST/COMMENTS (see SEND/LIST) ¹	Retrieve the membership list for a given mailing list, including members' RFC 822 comment fields
SEND/LIST/NOCOMMENTS (see SEND/LIST) ¹	Retrieve the membership list for a given mailing list, stripping members' RFC 822 comment fields
STOP (see END)	Same as END
SUBSCRIBE	Subscribe to a mailing list
UNSUBSCRIBE	Unsubscribe from a mailing list

¹Use of this command is generally restricted to authorized users.

6.2 Available Commands

The remainder of this chapter documents the available mail server commands. Please note that these commands are those accepted by the PMDF mail server. Other implementations of mail servers exist, notably the BITNET list servers. While there is a fair amount of commonality amongst the commands accepted by many of the different mail servers, differences also exist. Do not expect these commands to work with other mail servers and do not expect other mail server commands to work with PMDF mail servers. When you are unsure of what sort of mail server you are dealing with, the first order of business should be obtaining help information for that server. Often this can be done by sending the command HELP to the server.

Mail server commands

CONFIRM

CONFIRM

Confirm a command from a previous message.

SYNTAX **CONFIRM** *cookie*

PARAMETERS

cookie

Required cookie string to confirm the command.

DESCRIPTION

The CONFIRM command is used to confirm for MAILSERV the execution of a command from a previous message.

That is, for security your system administrators might have configured MAILSERV to require confirmation of certain commands. If you receive a message from MAILSERV saying that you need to send a

`CONFIRM cookie-string`

message back to MAILSERV in order for it to perform some particular command you previously requested, then if you want that command executed you must send back exactly

`CONFIRM cookie-string`

where *cookie-string* is the exact string MAILSERV tells you to send for that command.

Note that you should send a new message back to MAILSERV containing the required CONFIRM command, rather than simply resending or bouncing MAILSERV's own message back to MAILSERV (to ensure that you hear about any errors in processing your CONFIRM command).

Note that if you receive a message from MAILSERV talking about confirming a command that you did *not* send yourself, then that might mean that someone is attempting masquerade as you in e-mail and you might want to take this up with your system administrators.

ERROR MESSAGES

`%MAILSERV-F-NOCOOKIE, There is no confirmation-pending command labelled`

There was no command corresponding to such a cookie string awaiting confirmation. Check that you entered the cookie correctly.

DIRECTORY

Obtain a directory listing of the available files.

SYNTAX **DIRECTORY** *[file-spec]*

PARAMETERS

file-spec

Optional file name specification indicating which files to obtain a directory listing of. All OpenVMS file and directory wild cards are supported. A directory specification can be used; no device name or root directory specification is allowed.

DESCRIPTION

The **DIRECTORY** command provides a directory listing of the available files. The listing is returned to you as a mail message.

The **file-spec** parameter is optional and, if omitted, defaults to "*". If you are unsure of what to use, omit the parameter and send simply the command

```
DIRECTORY
```

This will provide you with a list of the files and directories in the top-level directory of the mail server. You can then use this information to refine your queries; *e.g.*, investigate the contents of an intriguing directory,

```
DIRECTORY [GAMES...]
```

ERROR MESSAGES

%MAILSERV-W-NOFILES, no files found

The supplied file specification does not match any available files.

%MAILSERV-F-NOFILESERV, file service is not enabled

The mail server is not configured to operate as a file server.

%MAILSERV-W-WRITEERR, file writing error

An error occurred while the server was producing your directory listing. Try resending the command at a later time.

Mail server commands

DIRECTORY/LIST

DIRECTORY/LIST

Obtain a listing of the available mailing lists.

SYNTAX **DIRECTORY/LIST** *[list-spec]*

PARAMETERS

list-spec

Optional mailing list specification indicating which mailing lists to obtain a listing of. OpenVMS wild cards are supported.

DESCRIPTION

The **DIRECTORY** command provides a listing of the available mailing lists.

The **list-spec** parameter is optional and, if omitted, defaults to “*”. Generally, there is no need to use this parameter unless you are interested in a specific mailing list. For instance, if you merely want to know if there is a mailing list about zeugmes, you might use the command

```
DIRECTORY/LIST *ZEUGME*
```

This will provide you with the names of any mailing lists which contain the phrase “zeugme” in them. Note that just because a mailing list is available does not necessarily mean that you can subscribe to it. The site might have established restrictions governing who can or cannot subscribe to some or all mailing lists.

ERROR MESSAGES

%MAILSERV-W-NOLISTS, no lists found

The supplied mailing list specification does not match any available mailing lists.

%MAILSERV-F-NOMAILLIST, mailing lists are not enabled

The mail server is not configured to operate as a list server.

%MAILSERV-W-WRITEERR, file writing error

An error occurred while the server was producing your listing of mailing lists. Try resending the command at a later time.

ENCODING

Specify the file encoding to use.

SYNTAX **ENCODING** *encoding*

PARAMETERS

encoding

Required parameter specifying the file encoding to use. The available encodings are: 8BIT, 7BIT, BASE32, BASE64, CBASE64 (gzip compressed BASE64), BASE85, BINHEX (encoding only, not the BINHEX file format), BTOA, HEXADECIMAL, PATHWORKS, QUOTED_PRINTABLE, UUENCODE, and CUUENCODE (gzip compressed UUENCODE).

DESCRIPTION

Binary files cannot be transmitted directly as electronic mail; they must first be encoded into a “printable” format. This, of course, means that they must be decoded upon receipt. The ENCODING command is used to specify the encoding to be applied to files requested with the SEND command. When selecting an encoding, be sure to select an encoding which you can decode. If your mail is handled by PMDF, then you can decode any of the encodings offered by PMDF mail servers.

The encoding specified with the ENCODING command applies to all subsequent SEND commands in the same message. It can be overridden with a subsequent ENCODING command or, on a per command, basis with the SEND command's /ENCODING qualifier. And, of course, encodings established in previous messages sent to the server have no effect on subsequent messages which you might send.

The BASE64 and QUOTED_PRINTABLE encodings are described in RFC 2045 (MIME, Part One). The HEXADECIMAL encoding is a simple hexadecimal encoding of the data. The data is encoded in 8 bit byte order. Each 8 bit byte is represented with two characters; the first character describes the high four bits and the second describes the low four bits. The UUENCODE encoding is compatible with the popular UUENCODE and UUDECODE utilities.

BASE64 is usually the best encoding to use: it is most likely to survive any mangling that might occur as the mail message works its way through the networks to you (*e.g.*, line wrapping, character set translation, space stripping, *etc.*).

Mail server commands

ENCODING

EXAMPLES

The commands,

```
ENCODING BASE64
MODE BLOCK
SEND [.GIF]BOATS*.GIF
SEND/MODE=TEXT [GIF]INDEX.TXT
```

set the default encoding to BASE64 and the default file reading mode to BLOCK. Any files matching the specification [GIF]BOATS*.GIF will be sent using these defaults. However, the file [GIF]INDEX.TXT will be sent as an ordinary text file owing to the use of the /MODE=TEXT qualifier.

ERROR MESSAGES

%MAILSERV-W-INSFPRM, missing command parameters

You failed to supply the name of the encoding to use. Resend the command with a valid encoding name specified.

%MAILSERV-W-IVKEYW, unrecognized keyword - check validity and spelling

You specified an unknown encoding. Resend the command with a valid encoding name specified.

END

Terminates command processing.

SYNTAX **END**

DESCRIPTION

The END command and its synonyms EXIT, FINISH, QUIT, and STOP all cause MAILSERV command processing to be terminated. The remainder of the message is discarded without any additional processing.

Mail server commands

HELP

HELP

Obtain help on using the mail server.

SYNTAX

HELP

DESCRIPTION

The HELP command returns a description of the commands recognized by the mail server.

ERROR MESSAGES

%MAILSERV-F-HLPNOTAVA, Help for server is presently unavailable

No help information is currently available. This may or may not be a temporary condition.

%MAILSERV-W-MAXPARAM, too many parameters

You supplied a parameter after the HELP command. The HELP command does not accept any parameters (*e.g.*, does not take a “topic” parameter).

INDEX

Obtain an index of the available files.

SYNTAX INDEX

DESCRIPTION

The INDEX command returns an index describing the files that the mail server can provide with the SEND command. This description might not give the names of each and every available file; for such information use the DIRECTORY command. The index is, typically, a simple description of some of the available files and, perhaps, a description of each of the top-level directories.

ERROR MESSAGES

%MAILSERV-F-INDNOTAVA, Index for server is presently unavailable

No file index information is currently available. This may or may not be a temporary condition. Try using the DIRECTORY command in the meantime.

%MAILSERV-W-MAXPARAM, too many parameters

You supplied a parameter after the INDEX command. The INDEX command does not accept any parameters. Resend the command without any parameters.

Mail server commands

LISTS

LISTS

Obtain an index of the available mailing lists.

SYNTAX

LISTS

DESCRIPTION

The LISTS command returns an index describing the mailing lists that the mail server handles. This description might not give the names of each and every available mailing list; for such information use the DIRECTORY/LIST command. The index is, more often than not, a simple description of the mailing lists handled by the server. It might also describe any policies associated with the lists (*e.g.*, who can subscribe, how to post to the list, *etc.*).

ERROR MESSAGES

`%MAILSERV-F-LSTNOTAVA`, Index of lists is presently unavailable

No mailing list index information is currently available. This may or may not be a temporary condition. Try using the DIRECTORY/LIST command in the meantime.

`%MAILSERV-F-NOMAILLIST`, mailing lists are not enabled

The mail server is not configured to operate as a list server.

`%MAILSERV-W-MAXPARAM`, too many parameters

You supplied a parameter after the LISTS command. The LISTS command does not accept any parameters. Resend the command without specifying any parameter.

MAXIMUM

Set the maximum message size; larger messages will be split into several smaller messages.

SYNTAX **MAXIMUM** *size-units size-value*

PARAMETERS

size-units

Required parameter specifying the units in which the **size-value** is expressed. The possible units are BYTES, BLOCKS, and LINES.

size-value

Required parameter specifying the limiting value. This must be an integer value which exceeds zero.

DESCRIPTION

Many gateways impose a limit on the maximum size message they will process. Because the mail server is often called upon to transmit large files it frequently can run afoul of such limitations.

The MAXIMUM command provides a way around such limitations. When a maximum size is set, messages larger than that size will be fragmented (split) into multiple messages, each message no larger than the specified maximum size. The fragmentation scheme is compliant with the message/partial type described in RFC 2046 (MIME, Part Two).²

The possible values for **size-units** are:

- BYTES **size-value** specifies the maximum number of bytes allowed in a single message. This value includes the initial header attached to the message. (Note that the header can increase in size through the addition of header lines during routing.)
- BLOCKS **size-value** specifies the maximum number of “blocks” of bytes allowed in a single message. The size of a block is a PMDF configuration option controlled by the system manager with the PMDF BLOCK_SIZE option; its default value is 1024 bytes. As with BYTES, this value includes the initial header attached to the message.
- LINES **size-value** specifies the maximum number of lines allowed in a single message. This limit is independent of the number of bytes or blocks. It is necessary to have an independent limit because some gateways limit message size based on both line count as well as overall size.

² PMDF systems provide facilities for automatically reassembling messages from their fragmented parts. Other mail systems that are MIME-compliant might provide similar facilities as well.

Mail server commands

MAXIMUM

The limits specified with the MAXIMUM command apply to all subsequent SEND commands in the same message. The imposed limits can be overridden with a subsequent MAXIMUM command. And, of course, limits you imposed in previous messages sent to the server have no effect on subsequent messages which you might send.

Both line count and byte size limits can be simultaneously imposed. For instance, the two commands:

```
MAXIMUM BYTES 10000
MAXIMUM LINES 1000
```

Will result in messages larger than either 10,000 bytes or 1,000 lines being automatically fragmented into smaller messages, each containing fewer than 10,000 bytes and 1,000 lines.

See the SEND command description for further information on the usage of this command.

ERROR MESSAGES

%MAILSERV-W-IVKEYW, unrecognized keyword - check validity and spelling

You specified an unknown unit specification. Resend the command specifying a legal value for the **size-units** parameter.

%MAILSERV-W-NUMBER, invalid numeric value - supply an integer

An invalid numeric value was supplied for the **size-value** parameter. Resend the command specifying a positive integer value.

%MAILSERV-W-POSITIVE, invalid numeric value - supply a positive integer

An invalid numeric value was supplied for the **size-value** parameter. Resend the command specifying a positive integer value.

%MAILSERV-W-INSFPRM, missing command parameters

You failed to specify one or both of the required parameters. Resend the command specifying both the **size-units** and **size-value** parameters.

MODE

Set the file reading mode.

SYNTAX **MODE** *mode*

PARAMETERS

mode

Required parameter specifying the file reading mode in which files are to be accessed. There are four supported modes: TEXT, BLOCK, RECORD, and RECORD-ATTRIBUTE.

DESCRIPTION

Under OpenVMS, files can be read (accessed) in a variety of ways. The MODE command controls the method used to read the files the mail server returns. Note that default modes apply automatically to various sorts of files; this command provides a way to override these defaults.

The possible values for **mode** are:

TEXT	Read files as ordinary text files. In TEXT mode, files are read as a sequence of records and sent as ordinary text. TEXT mode is the default for files when no other mode has been set.
BLOCK	Read files as raw binary data. Any record boundary information, including carriage returns, line feeds, line length counts, and indexing information for indexed files simply becomes part of the data. The resulting data typically can only be used on the computer system it is intended for. (Note that this not necessarily restricted to OpenVMS; it is possible to store files intended for other systems as VMS files.) This is the recommend mode to use for binary files.
RECORD	Read files as a series of records. No record boundaries of any kind appear in the output data. This mode is appropriate for fixed length records or records that are internally self-delimiting.
RECORD-ATTRIBUTE	Read files as a series of records. If the record attributes of the file indicate that boundaries should be placed between the records (<i>i.e.</i> , some form of carriage control is requested), a boundary delimiter will be placed between each record. This character is normally a line feed.

The reading mode specified with the MODE command applies to all subsequent SEND commands in the same message. It can be overridden with a subsequent MODE command or, on a per command, basis with the SEND command's /MODE qualifier. And, of course, reading modes established in previous messages sent to the server have no effect on subsequent messages which you might send.

Mail server commands

MODE

See the SEND command description for further information on the usage of this command.

EXAMPLES

The commands,

```
MODE BLOCK
ENCODING BASE64
SEND [.GIF]BOATS*.GIF
SEND/MODE=TEXT [GIF]INDEX.TXT
```

set the default reading mode to BLOCK and the default file encoding to BASE64. Any files matching the specification [GIF]BOATS*.GIF will be sent using these defaults. However, the file [GIF]INDEX.TXT will be sent as an ordinary text file owing to the use of the /MODE=TEXT qualifier.

ERROR MESSAGES

%MAILSERV-W-IVKEYW, unrecognized keyword - check validity and spelling

You specified an unknown mode. Resend the command specifying a legal value for the **mode** parameter.

%MAILSERV-W-INSFPRM, missing command parameters

You failed to specify the **mode** parameter. Resend the command specifying a legal value for the **mode** parameter.

PURGE/LIST

Remove comment lines from a mailing list file.

SYNTAX **PURGE/LIST** *list-name*

PARAMETERS

list-name

Required parameter specifying the name of the list from which comment lines are to be removed. Wildcards are not allowed.

DESCRIPTION

Mailing list files can contain comment lines. In particular, unsubscribed addresses are normally indicated via comment lines in the file. The PURGE/LIST command causes such comment lines to be removed, which can be useful to “clean up” the mailing list file for a list which has undergone a great many changes in membership.

EXAMPLES

The commands,

```
PURGE/LIST fads-list  
SEND/LIST fads-list
```

causes the fads-list mailing list membership file to have comment lines removed from the file, and then a copy of the file is requested.

ERROR MESSAGES

%MAILSERV-W-CANTDELETE, cannot delete old mailing list file

An error occurred while trying to delete the old mailing list file. Try again later; the postmaster in charge of the mail server has been notified.

%MAILSERV-W-CANTUPDATE, cannot update mailing list file

An error occurred while trying to update the mailing list file. Try again later; the postmaster in charge of the mail server has been notified.

Mail server commands

PURGE/LIST

%MAILSERV-W-FLK, file currently locked by another user

The specified mailing list file is not currently accessible. Try again later.

%MAILSERV-W-INSFPRM, missing command parameters

You failed to specify the **list-name** parameter. Resend the command specifying a legal value for the **list-name** parameter.

%MAILSERV-W-LNF, mailing list not found

The mailing list you specified does not exist. Resend the command specifying the name of a valid mailing list. You can use the DIRECTORY/LIST command to obtain a listing of the valid mailing list names.

%MAILSERV-W-LSTCREERR, unable to create new mailing list

The mailing list specified by the **list-name** parameter does not exist and could not be created. Check to make sure that you specified the correct list name.

%MAILSERV-F-NOMAILLIST, Mailing lists are not enabled

The mail server is not configured to operate as a list server.

%MAILSERV-W-PRV, insufficient privilege or file protection violation

You are not allowed to purge this mailing list. The MAILSERV_ACCESS mapping can be used to change the default behavior of the MAILSERV PURGE/LIST command. Please refer to the Mail and list server section of the *PMDF System Manager's Guide*.

SEND

Retrieve one or more files from the server.

SYNTAX **SEND** *file-spec extension*

Qualifiers	Defaults
/ENCODING= <i>encoding</i>	None
/MODE= <i>mode</i>	/MODE=TEXT

PARAMETERS

name

Required parameter specifying the file or files to send. This parameter can include a directory specification, but *must* include a file name. OpenVMS wild cards are allowed in both the directory and file specification.

extension

Optional parameter which can be used to specify the extension of the file to be sent.

DESCRIPTION

The SEND command sends the requested files back to you via electronic mail. Wild cards can be used in the **file-spec** parameter to specify multiple files. Each file is sent as a separate message.

The optional **extension** parameter is supplied for compatibility with BIT-NET's LISTSERV file servers. When supplied, a period followed by the value of this parameter will be appended to the value of the **file-spec** parameter to form the actual file name to use. For instance, the command

```
SEND NEWTAGS DESCRIPT
```

is interpreted as a request for the file NEWTAGS.DESCRPT and is equivalent to the command

```
SEND NEWTAGS.DESCRPT
```

Large files can automatically be split into multiple smaller files prior to transmission; see the description of the MAXIMUM command for specific details. When the MAXIMUM command is used, it must be specified prior to the SEND command; *e.g.*,

```
MAXIMUM BYTES 10000
MAXIMUM LINES 1000
SEND [BOOK] CHAPTER*.TXT
```

Mail server commands

SEND

Files can be read in a variety of ways; this can be controlled with the `MODE` command or the `/MODE` qualifier. Files containing non-text information must be encoded in some way; the `ENCODING` command or the `/ENCODING` qualifier control the encoding used. When using the `MODE` and `ENCODING` commands, be sure to specify them before the `SEND` command requiring their use.

Use the `DIRECTORY` and `INDEX` commands to obtain information on available files which can be obtained with the `SEND` command.

QUALIFIERS

/ENCODING=encoding

The `/ENCODING` qualifier specifies the encoding to use for this particular file. It does not establish any default for future `SEND` commands, but it overrides any default set with the `ENCODING` command for this particular `SEND` command. The value is required and must be one of the values the `ENCODING` command accepts.

/MODE=mode

The `/MODE` qualifier specifies the mode to use for this particular file. It does not establish any sort of default for future `SEND` commands, but it overrides any default set with the `MODE` command for this particular `SEND` command. The value is required and must be one of the values the `MODE` command accepts.

EXAMPLES

```
1  $ MAIL
    MAIL> SEND
    To:      in%"mailserv@example.com"
    Subj:
    Enter your message below. Press CTRL/Z when complete, or CTRL/C to quit:
    SEND [FONTS] README.TXT
    CTRL/Z
    MAIL> EXIT
    $
```

In this example, a simple request with a single command is sent to the mail server `mailserv@example.com`. This single command requests that the file `[FONTS]README.TXT` be sent.

```
2  $ MAIL
    MAIL> SEND
    To:      in%"mailserv@example.com"
    Subj:
    Enter your message below. Press CTRL/Z when complete, or CTRL/C to quit:
    MAXIMUM BYTES 10240
    SEND/MODE=BLOCK/ENCODING=BASE64 [FONTS] ADOBE35.PFB-Z
    CTRL/Z
    MAIL> EXIT
    $
```

In this example, a large binary file is being requested. The `/MODE` and `/ENCODING` qualifiers are used to request that the file be interpreted as raw binary data and sent

in an encoded format. The **MAXIMUM** command is used to fragment the encoded file into several small messages, each no larger than 10K (10,240 bytes).

ERROR MESSAGES

%MAILSERV-W-FLK, file currently locked by another user

One or more of the requested files is not currently accessible. Try again later.

%MAILSERV-W-INSFPRM, missing command parameters

You failed to supply the name of the files to send. You must supply a file specification. Resend the command with a file specification.

%MAILSERV-W-IVKEYW, unrecognized keyword - check validity and spelling

You specified an unknown encoding or reading mode. Resend the command using a legal encoding or reading mode with the /ENCODING or /MODE qualifier.

%MAILSERV-W-NOFILES, no files found

Supplied file specification does not match any available files. Use the DIRECTORY command to obtain a listing of the available files.

%MAILSERV-F-NOFILESERV, file service is not enabled

The mail server is not configured to operate as a file server.

%MAILSERV-W-PRV, insufficient privilege or file protection violation

You are not allowed access to one or more of the requested files.

%MAILSERV-W-VALREQ, missing qualifier or keyword value

You failed to supply a value with the /ENCODING or /MODE qualifier. Resend the command with a value specification.

Mail server commands

SEND/LIST

SEND/LIST

Return a list of the current subscribers to a particular mailing list.

SYNTAX

SEND/LIST *list-name*

Qualifiers	Defaults
<i>/COMMENTS</i>	<i>See text</i>

PARAMETERS

list-name

Required parameter specifying the name of the list whose subscribers are to be returned. Wild cards are not allowed.

DESCRIPTION

The SEND/LIST command responds with a message containing a list of the current subscribers to a given mailing list.

QUALIFIERS

/COMMENTS

/NOCOMMENTS

When */COMMENTS* is specified, comment fields associated with each subscribed address will also be returned. Specify */NOCOMMENTS* to have these fields stripped from the listing sent to you. The default behavior can vary from list to list. Generally the default behavior is to include the comments.

Note that in RFC 822 addresses, comments are completely superfluous and it should be possible to strip any or all comments from an address without breaking the address. However, there are known to be mailers which stupidly put critical information into comment fields with the expectation that the comments will not be stripped or altered. Addresses for such mailers can be rendered unreplyable by removing the comment fields from them.

ERROR MESSAGES

%MAILSERV-W-INSFPRM, missing command parameters

You failed to specify the mailing list name. Resend the command specifying the name of the mailing list whose membership list you want to obtain.

Mail server commands

SEND/LIST

%MAILSERV-W-LNF, list not found

The mailing list you specified does not exist. Resend the command specifying the name of a valid mailing list. You can use the DIRECTORY/LIST command to obtain a listing of the valid mailing list names.

%MAILSERV-F-NOMAILLIST, mailing lists are not enabled

The mail server is not configured to operate as a list server.

%MAILSERV-W-PRV, insufficient privilege or file protection violation

You are not allowed to retrieve the list of subscribers to this mailing list. The MAILSERV_ACCESS mapping can be used to change the default behavior of the MAILSERV SEND/LIST command. Please refer to the Mail and list server section in the PMDF System Manager's manual.

%MAILSERV-W-WRITEERR, file writing error

An error occurred while the mail server was writing the message to you. Try resending this command at a later time.

Mail server commands

SUBSCRIBE

SUBSCRIBE

Subscribe to a mailing list.

SYNTAX **SUBSCRIBE** *list-name* *[[personal-name] address]*

PARAMETERS

list-name

Required parameter specifying the name of the mailing list to subscribe to. Wild cards are not allowed.

personal-name

Optional parameter specifying the personal name for the address to subscribe to the mailing list. If this parameter is omitted, no personal name information will be included in the subscribed address.

address

Optional parameter specifying the fully-qualified address to subscribe to the mailing list. If no address is specified, the From: address from the requesting message will be used.

DESCRIPTION

The SUBSCRIBE command adds either your address or a specified address to the specified mailing list. A response message reporting the success or failure of the subscription request will be returned. If the file PMDF_MAILSERV_MAIL_DIR:**list-name**.TXT exists, it will be sent to you.

Use the UNSUBSCRIBE command to subsequently unsubscribe from a mailing list; use the DIRECTORY/LIST or LISTS command to obtain information on available mailing lists.

Note that some mail servers can impose restrictions as to who may or may not subscribe to a given list.

EXAMPLES

1 SUBSCRIBE LOCAL-NEWS

This example shows the command to SUBSCRIBE oneself to the list LOCAL-NEWS.

2 SUBSCRIBE LOCAL-NEWS "John Doe" <jdoe+local-news@example.com>

This example shows the user `jdoe@example.com` subscribing the address "John Doe" <`jdoe+local-news@example.com`> to the list LOCAL-NEWS. That is, this example shows a subscription request using a more formal address format, one that includes an RFC 822 personal name as well as the actual address, and where the address includes a subaddress; see for more details about subaddresses.

ERROR MESSAGES

%MAILSERV-W-ALREADYSUB, address is already subscribed to the mailing list

You are already subscribed to the mailing list. If you used the optional **address** parameter, then the specified address is already subscribed. Check to make sure that you specified the correct mailing list name or address or both.

%MAILSERV-W-CANTDELETE, cannot delete old mailing list file

An error occurred while trying to delete the old mailing list file. Try again later; the postmaster in charge of the mail server has been notified.

%MAILSERV-W-CANTUPDATE, cannot update mailing list file

An error occurred while trying to update the mailing list. Try again later; the postmaster in charge of the mail server has been notified.

%MAILSERV-W-ILLADDRESS, illegal address

You specified an illegal or invalid address for the optional **address** parameter. Resend the command either omitting the address entirely or specifying a valid address.

%MAILSERV-W-INSFPRM, missing command parameters

You failed to supply the name of the mailing list to subscribe to. Resend the command with a list name specification.

%MAILSERV-W-LNF, list not found

The mailing list you specified does not exist. Resend the command specifying the name of a valid mailing list. You can use the DIRECTORY/LIST command to obtain a listing of the valid mailing list names.

%MAILSERV-W-LSTCREERR, unable to create new mailing list

The mailing list specified by the **list-name** parameter does not exist and could not be created. Check to make sure that you specified the correct list name.

%MAILSERV-W-LSTLOCKED, mailing list currently locked by another user

The mailing list is currently locked; you cannot subscribe to it at this time. Try resending the command again later.

%MAILSERV-F-NOMAILLIST, mailing lists are not enabled

The mail server is not configured to operate as a list server.

Mail server commands

SUBSCRIBE

%MAILSERV-W-PRV, insufficient privilege or file protection violation

You are not allowed to subscribe to this mailing list.

UNSUBSCRIBE

Unsubscribe from a mailing list.

SYNTAX **UNSUBSCRIBE** *list-name* [*address*]

PARAMETERS

list-name

Required parameter specifying the name of the mailing list to unsubscribe from. Wild cards are not allowed.

address

Optional parameter specifying the address to remove from the mailing list. If no address is specified, the From: address from the requesting message will be used.

DESCRIPTION

The UNSUBSCRIBE command removes either your address or the address you specify from the specified mailing list. A response message reporting the success or failure of the unsubscribe request will be returned.

Typically, the use of the optional **address** parameter is restricted.

ERROR MESSAGES

%MAILSERV-W-CANTDELETE, cannot delete old mailing list file

An error occurred while trying to delete the old mailing list file. Try again later; the postmaster in charge of the mail server has been notified.

%MAILSERV-W-CANTUPDATE, cannot update mailing list file

An error occurred while trying to update the mailing list. Try again later; the postmaster in charge of the mail server has been notified.

%MAILSERV-W-ILLADDRESS, illegal address

You specified an illegal or invalid address for the optional **address** parameter. Resend the command either omitting the address entirely or specifying a valid address.

%MAILSERV-W-INSFPRM, missing command parameters

You failed to supply the name of the mailing list to unsubscribe from. Resend the command with a list name specification.

Mail server commands

UNSUBSCRIBE

MAILSERV-W-LNF, mailing list not found

The mailing list you specified does not exist. Resend the command specifying the name of a valid mailing list. You can use the DIRECTORY/LIST command to obtain a listing of the valid mailing list names.

%MAILSERV-W-LSTCREERR, unable to create new mailing list

The mailing list specified by the **list-name** parameter does not exist and could not be created. Check to make sure that you specified the correct list name.

%MAILSERV-W-LSTLOCKED, mailing list currently locked by another user

The mailing list is currently locked; you cannot unsubscribe from it at this time. Try again later.

%MAILSERV-F-NOMAILLIST, mailing lists are not enabled

The mail server is not configured to operate as a list server.

%MAILSERV-W-NOSUCHADR, no such address subscribed to the mailing list

You are not subscribed to the specified mailing list. If you used the optional **address** parameter, then the specified address is not subscribed. Check to make sure that you specified the correct mailing list name or address or both.

%MAILSERV-W-PRV, insufficient privilege or file protection violation

You are not allowed to unsubscribe from this mailing list or unsubscribe addresses other than your own from the list.

7 Pine User Agent

Pine is a user-agent for reading, sending, and managing electronic messages. It was originally developed at the University of Washington with novice users in mind, but can be tailored to accommodate the needs of more experienced users. The UNIX, DOS, and Windows versions are maintained by the Computing & Communications group at the University of Washington and can be obtained from ftp.cac.washington.edu via anonymous FTP. A mailing list for Pine is maintained as pine-info@cac.washington.edu; however, bugs found in the PMDF version of Pine should be reported to support@process.com.

Pine has a full-screen interface which uses one-character mnemonic commands and control sequences for its command input.¹ You do not have to hit the RETURN or ENTER key to finish a command. A command menu is always present at the bottom of the screen, and help is only one keystroke away. It is intended that Pine can be learned by exploration and the browsing of extensive, context-sensitive on-line help provided within Pine, but some basic concepts to get a new user started are discussed below.

7.1 Running Pine

Note: System managers should see also Section 7.7, OpenVMS System Configuration for PMDF Pine.

To start PINE, use the PMDF PINE command:

```
$ PMDF PINE
```

Command line qualifiers for pine are not supported. Pine is exited using the Quit command, Q.

Pine uses the OpenVMS SMG\$ run-time library to implement terminal I/O. Pine will be unable to start if the terminal type is unknown to SMG\$. If pine dies unexpectedly, it is possible that the terminal characteristics might need to be reset. Specifically you might need to issue the command:

```
$ SET TERMINAL/NOPASTHRU/LINE_EDIT
```

so as to restore your terminal characteristics.

¹ Control sequences are indicated by a ^ appearing before the command key on the menu.

Pine User Agent

Running Pine

7.1.1 Function Key Mode

Pine has a function key mode which is enabled by the `use-function-keys` option in the pine resource file. When enabled, the VT numeric keypad keys are mapped to the function keys F1 through F12 as follows:

- PF1–PF4 are mapped to F1–F4,
- KP5–KP9 are mapped to F5–F9,
- KP0 is mapped to F10,
- KP1 is mapped to F11, and
- KP2 is mapped to F12.

In addition, the top row function keys F6 to F12 are mapped to their namesakes. The `Help` key is mapped to F1.

The `minus` key on the numeric keypad, `KP-`, can be used in place of the `control`, `CTRL`, key. However, it is used as a two key sequence. For example, to enter `CTRL/A`, you would press the two keys `KP-` followed by `A`.

One consequence of using pine in function key mode is that you can only choose from twelve commands at any given time. That is, whereas in alphabetic key mode you can press a key for a command even though the command is not visible on the bottom of the screen, in function key mode you must toggle to the screen where the command is visible.

7.2 Pine Concepts

Pine is an IMAP (Internet Message Access Protocol) client and POP (Post Office Protocol) client which can access local VMS MAIL mail files as well as other mail files served by an IMAP server or POP3 server.

If only local mail is to be accessed, no network connection is created, and no IMAP server or POP server is needed on the local system. If your system does not have any TCP/IP software installed, then you will receive an error message when you attempt any operation requiring TCP/IP access. To access mail files on a remote OpenVMS system, an IMAP server such as the PMDF IMAP server, or a POP server such as the PMDF POP server, must be running on that remote system. To access mail files on a remote UNIX system, the remote system must have an IMAP daemon (server) or POP daemon (server) running.²

Pine is also an NNTP (Network News Transport Protocol, RFC 977) client, and can be used to read news from NNTP servers like the ANU News program or many common UNIX NNTP servers. Of course, you have to know the name of one such system before you can use this capability. Ask your system or network manager for help.

² To find out more about IMAP, read the IMAP4rev1 specification stored in the file `PMDF_ROOT:[DOC.RFC]RFC2060.TXT`; to find out more about POP, read the POP3 specification stored in the file `PMDF_ROOT:[DOC.RFC]RFC1939.TXT`.

The pine view is that messages are stored in folders, and folders are stored in folder collections. Folder collections can be physically located on the local system, or on any remote system with an IMAP server. Regardless of what system a folder collection is physically located on, a pine user sees it as just another folder collection: a pine user can read messages in any of their folder collections and can save (move) messages between different folder collections. See Section 7.4 below for more details on folders and folder collections.

Or a read-and-delete-only pine folder can correspond to the “new messages” folder on a remote system with a POP3 server. (The POP3 protocol does not provide access to multiple folders—it only provides access to the “new” messages, usually those in a special “new” sort of folder. The POP3 protocol also does not allow for moving messages into a POP3 folder.)

7.3 Pine Configuration files

The `pine resource` file is the most important file used by Pine. This file contains the configuration options settable by a user. See Section 7.3.1 and Section 7.6 below for details.

Users can have address books in pine, with nicknames for long addresses or mailing lists. See Section 7.3.2 below for details.

When using pine to read news group messages, a file is required listing the names of news groups you read; by default, pine uses the file `PMDF_INIT:NEWSRC`. See Section 7.3.3 below for details.

When reading MIME messages, pine uses a `mailcap` file to determine how to display the message parts. See Section 7.3.4 below for details.

When sending attachments, pine consults a file to determine what MIME labelling to use on the attachment parts. By default, the file consulted is `PMDF_INIT:MIME.TYPES`, or as specified by the `mimetype-search-path` option setting in the pine resource file.

Pine also has other optional configuration files to control filtering incoming or outgoing message text, *etc.*

Note: System managers should also see Section 7.7.3, System-Wide Configuration Files, for information on tailoring the the pine environment on the system via additional system-level pine configuration files.

7.3.1 The Pine Resource File

Pine uses a resource file to keep track of its configuration, user preferences, and other information. On OpenVMS systems, this file is named `PINE.PINERC` and is located in

Pine User Agent

Pine Configuration files

the `PMDF_INIT: directory`.³ By default, `PMDF_INIT` is a logical which translates to `SYS$LOGIN`. Users wanting to keep their pine resource file elsewhere can redefine the `PMDF_INIT` logical.⁴ The logical name `PINERC` can be used to specify an alternate file name. For instance, the definition

```
$ DEFINE PINERC PINE.RC
```

causes the file name `PINE.RC` to instead be used, thereby accessing the file

```
PMDF_INIT:PINE.RC
```

The definition of the `PINERC` logical must not contain a device or directory reference.

See Section 7.6 for a description of the many pine configuration options available in the pine resource file.

7.3.2 The Pine Address Book

You can have one or more addressbooks in Pine. In addition to a personal addressbook, one or more global, read-only addressbooks can be set up (for sharing between multiple users). The names of your personal addressbooks are specified in the Pine resource file by the `address-book` option. Normally, this option is set and modified from within Pine by using the `SETUP` menu and then selecting the `Addressbook` menu; it can, however, also be set by manually editing the Pine resource file. The built-in default file name used for an addressbook `PMDF_INIT:PINE.ADDRESSBOOK`. A “lookup” file is used to speed access to the addressbook. The lookup file has the same name as the addressbook, with `-LU` as suffix; *e.g.*, `PMDF_INIT:PINE.ADDRESSBOOK-LU`. The lookup file is generated automatically by Pine. Global addressbooks can be specified using the `global-address-book` option.

7.3.2.1 Pine Address Books and the PMDF Personal Alias Database

A limited interface between Pine’s address books and PMDF’s personal alias database has existed since Pine 3.91. When you add an address to one of Pine’s address books using Pine’s `ADDRESS BOOK` menu, it will also be added to your personal alias database, overwriting any existing entry of the same name. The Pine “nickname” is the alias name used in PMDF’s personal alias database and the e-mail address is the corresponding value for the alias. Adding or deleting Pine’s address lists has no effect on PMDF’s personal alias database.

When you delete an address in one of Pine’s address books, it is also deleted from PMDF’s personal alias database if present.

The `J` command can be used to dump the entire current addressbook into your PMDF personal alias database. If no personal alias database exists, it will be created.

³ PMDF Pine does not use the same resource file name as on UNIX, `.pinerc`, as it is not advisable on OpenVMS to use file names with only an extension part.

⁴ Note that redefining `PMDF_INIT` also affects the location of a number of other PMDF initialization files.

7.3.3 Pine News Groups File

If you use the news reading capability in Pine to talk to a NNTP server, then you need to have a NEWSRC. file in the PMDF_INIT: directory, or a newsrc file with a non-default name as selected by your `newsrc-path` Setup Config option. This file contains the names of news groups you read. Pine updates it when you delete a message in the news group. Deleting a message in news does not really delete it, but simply makes the message unavailable to you when you next read the associated news group. The format of this file is one line per news group, with the lines having the format:

```
newsgroupname: [message, ...]
```

where *message* is either a number or a range of numbers (e.g., 1-3).

7.3.4 Mailcap Files

When reading MIME messages, Pine uses a mailcap file to determine how to display message parts. Mailcap files are described in RFC 1524, a copy of which can be found as PMDF_ROOT:[DOC.RFC]RFC1524. Or see Section 8.3.5 which gives a brief overview of mailcap files.

The default mailcap filename is MAILCAP. in the PMDF_INIT directory, unless the logical name PMDF_MAILCAP_DIR is defined, in which case the list of directories defined by PMDF_MAILCAP_DIR is searched for the file MAILCAP., in the order listed. The first entry found in the list of files will be used. For instance, with the following PMDF_MAILCAP_DIR definition, PMDF will use a user's own mailcap file, if they have one, and if the user does not have a personal mailcap file, PMDF will use a mailcap file in the PMDF table directory:

```
$ DEFINE/SYSTEM PMDF_MAILCAP_DIR PMDF_INIT:, PMDF_TABLE:
```

Note that a trailing colon is necessary if logical names are used because the filename MAILCAP. is appended to whatever value you have specified.

7.4 Folders and Folder Collections

The Pine view is that messages are stored in folders, and folders are stored in folder collections. Folder collections can be physically located on the local system, or on any remote system with an IMAP server. Regardless of what system a folder collection is physically located on, a Pine user sees it as just another folder collection: a Pine user can read messages in any of their folder collections and can save (move) messages between different folder collections.

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Folders and Folder Collections

7.4.1 Folders

Each mail message is stored in a folder. A Pine folder is equivalent to a VMS MAIL folder in a VMS MAIL mail file.

7.4.1.1 Folder Name Case-Sensitivity

While both Pine and VMS MAIL folder names are case sensitive, Pine users must be much more mindful of this fact. (VMS MAIL automatically converts folder names to upper case unless you surround the folder name with quotes.)

7.4.1.2 Newly Created Folders and Placeholder Messages

For VMS MAIL files, a new folder is automatically created the first time a message is saved to it; a folder is automatically deleted when all messages in the folder are deleted. So when you use the Create folder command in Pine to create a new folder, the folder will be created with a placeholder message in it.

7.4.2 Folder Collections

A *folder collection* is a folder specification for a collection of folders on one system. For example, it can be all of your VMS MAIL folders which have the name prefix INFO-, or it can be all of your UNIX mail folders on a system called foo.bar.com, or it can be all of your VMS MAIL folders in a different mail file than you normally use. You can access multiple different folder collections from within Pine.

By default, PMDF Pine knows only about the local folder collection, corresponding to your VMS MAIL mailbox. The use of additional folder collections is controlled by the `folder-collections` option in your Pine resource file. Normally, this option is set from within Pine by using the SETUP menu and then selecting the L (collectionList) menu. However, the option can also be set by manually editing your Pine resource file.

7.4.2.1 folder-collection Option Syntax

The setting of the `folder-collections` option can be a list of values, where each value specifies a folder or folders on the local system or accessible via an IMAP server, or specifies the new mail folder accessible via a POP3 server. Folders on the local system or accessible via an IMAP server are specified using the format:

```
optional-label {imaphost}optional-file[view]
```

or

```
optional-label {imaphost:port/user=username}optional-file[view]
```

optional-label is a label which will be displayed by Pine in place of the full name of the folder collection.

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The optional field *imaphost* is the name of a host where the mail file resides. *imaphost* can be any system which has an IMAP4 server, and need not necessarily be an OpenVMS system.

The optional *port* specification can be included if you want to connect to a port other than the default (for IMAP) of 143.

The optional *username* can be included if you want to log in to the *imaphost* under a different account name.

The optional field *optional-file* is the file specification of a mail file. If *optional-file* is omitted but *imap-host* is specified, then the default mail file on the remote *imaphost* system will be used. If neither *optional-file* nor *imap-host* is specified, then your local default mail file will be used.

When *optional-file* is specified for an OpenVMS host locally or remotely running PMDF's legacy IMAP server,⁵ it must have the format

```
#disk:<directory>mailfile.mai#
```

where *disk*, *directory*, and *mailfile.mai* specify the full path, disk, directory, and file name, to the mail file. For instance, to select the mail file MEMOS.MAI of DISK\$USER1:[BOB], you would specify

```
#DISK\ $USER1 : <BOB>MEMOS .MAI#
```

Finally, the *view* field controls which folders from the mail file are part of the collection. If specified as being empty, [], then all folders from the mail file are treated as part of the collection. Wild cards can be used to select folders matching a pattern. For example, [INFO-*] would select all folders beginning with the string INFO- from the mail file. Again, note that folder names are considered to be case sensitive.

For POP3 access to a new mail folder on a remote system, the format is:

```
"foldername" {pop3host/POP3}INBOX
```

or

```
"foldername" {pop3host/POP3/USER=username}INBOX
```

where *foldername* is the name by which Pine will refer to the folder, *pop3host* is the name of the system running the POP3 server, and *username* is the name under which to log in to the remote POP3 server.

⁵ The PMDF IMAP server was first available in PMDF V4.3.

Pine User Agent

Folders and Folder Collections

7.4.2.1.1 Example folder-collections Option Setting

An example of setting the `folder-collections` option in your Pine resource file, `PINE.PINERC`, to a list of several folder collections is:

```
folder-collections=local [],
archive #DRA0:<JONES.ARCHIVE>OLDMAIL.MAI# [],
remoteVMS {vax.example.com}#DUA2:<JONES.MAIL>MAIL.MAI#[INFO*]
remoteUNIX {sun.example.com}mail/ []
```

In the above example, four collections with the names `local`, `archive`, `remoteVMS`, and `remoteUNIX` are created. `local` consists of all folders in the local default mail file; `archive` consists of all folders in the mail file `DRA0:[JONES.ARCHIVE]OLDMAIL.MAI`; `remoteVMS` consists of all folders whose name begin with `INFO` in the mail file `DUA2:[JONES.MAIL]MAIL.MAI` on the remote host `vax.example.com`; and `remoteUNIX` consists of all folders from the mail directory `mail/` on the remote system `sun.example.com`.

7.4.2.2 Saving Messages in Folder Collections

When saving a message to a different folder collection, you can select `Prev Collection` or `Next Collection` to get to the folder collection you want to save to. Here, “Prev” is an abbreviation for “Previous”. By default, the first folder collection is the one to save to.

For local or remote OpenVMS servers, you can also specify the file name where the folder resides directly as

```
#disk:[directory]mailfilename#foldername
```

when prompted with the folder name. If you are saving to the same file in the folder collection, then only the folder name itself is needed.

7.5 OpenVMS-Specific Issues

In the following subsections, some issues specific to Pine on OpenVMS are discussed.

7.5.1 The Expunge Command

When accessing mail locally, the Pine `Expunge` command moves all messages marked for deletion to the `VMS MAIL WASTEBASKET` folder. In addition, it performs the equivalent `VMS MAIL PURGE` command only when your `VMS MAIL` profile allows for `AUTO_PURGE`. If you have set `NOAUTO_PURGE`, then the deleted messages are left in the `WASTEBASKET` folder. However, should you expunge the `WASTEBASKET` folder, then the `VMS MAIL PURGE` function will be performed. Purged message space is not available for reuse until a reclaim operation is performed. When the amount of deleted message space in the mail file exceeds 32,767 bytes, a reclaim operation is automatically done by the `Expunge` command.

Note: Pine never compresses your mail file.

7.5.2 Checking for New Mail

By default, Pine automatically checks for new mail every 2.5 minutes (150 seconds). This interval is settable per user as the `mail-check-interval` configuration option (unless the system manager choose to fix its value in the `PINE.CONF-FIXED` file). You can also force a refresh of the folder by pressing the DOWN arrow key four times at the last message of the Index screen or by pressing CTRL/L. A folder is also refreshed whenever you expunge it. When you force a check, and you have no new mail, Pine will report the last message as new mail even though it is not new.

7.5.3 The VMS MAIL Profile

When accessing mail locally, Pine uses the same VMS MAIL mail file as VMS MAIL and PMDF MAIL, so you can use any of these programs interchangeably and access the same messages stored in a VMS MAIL mail file.

Pine uses your VMS MAIL profile settings as follows:

AUTO_PURGE

When AUTO_PURGE is set, expunged messages will be purged from your mail file, *i.e.*, purged from your WASTEBASKET folder.

COPY_SELF

Your VMS MAIL COPY_SELF settings are honored by Pine when sending or replying to messages.

MAIL_DIRECTORY

The MAIL_DIRECTORY profile setting is used when you do not specify a filename with your folder specification.

Note: Pine should **not** be used on an account whose login device is a search list and has MAIL_DIRECTORY defined as a subdirectory.

PERSONAL_NAME

Your VMS MAIL PERSONAL_NAME setting will be used if none is set in Pine's configuration file.

WASTEBASKET_NAME

As with VMS MAIL, the WASTEBASKET_NAME setting is used for your wastebasket folder name.

Pine User Agent

Configuration Options in the Pine Resource File

7.6 Configuration Options in the Pine Resource File

The Pine resource file is used to control numerous Pine configuration options. This file is normally named PINE.PINERC and located in your login directory; see Section 7.3.1 for details on the name and location of this file.

By customizing the option settings in your Pine resource file, you can customize your Pine environment to your liking. Generally the best way to set or change option settings in your Pine resource file is from within Pine, via the `SETUP` submenu accessed from Pine's main menu; selecting `Config` in particular provides access to setting a great many options. (Context sensitive help is available within Pine for each such configurable item so you can get hints on setting your options.) However, the Pine resource file is a normal text file, so it is also possible to modify the Pine resource file using a text editor.

Section 7.6.1 below describes the overall format of the Pine resource file and the format for specifying option values. Section 7.6.2 lists the available configuration options.

7.6.1 Format of the Pine Resource File

In the Pine resource file, any line starting with `#` is considered to be a comment line. Lines not beginning with `#` contain settings for configuration options using the format

```
option=value[,value,...]
```

All values are strings; quotes can be used around any value. If a value is absent, then the associated option is not set and a system-wide default setting, if there is one, will be used instead. For some options, only the values `YES` and `NO` are allowed.

The dollar sign, `$`, has a special meaning in the configuration file: it means that the word following it is an "environment variable", *i.e.*, a DCL symbol or logical name, the value of which is then substituted at that point in the file. To specify `$` in a value, you need to prefix it with a backslash; *e.g.*,

```
SYS\<$LOGIN:SIGNATURE.TXT
```

A line beginning with a space or tab is considered to be a continuation of the previous line.

7.6.2 Available Configuration Options

The available options are shown below.

`address-book`

Specifies the file name for your Pine address book. The default is `PINE.ADDRESSBOOK`. This file always resides in the `PMDF_INIT:` directory.

Note that this option is not presented as such from within Pine. Though you can set the option manually by editing your Pine resource file, more commonly the option is

Pine User Agent Configuration Options in the Pine Resource File

controlled by using the Addressbook menu from under the SETUP menu.

`addrbook-sort-rule`

Specifies the ordering rule by which an address book will be presented. The choices are: `dont-sort`, `fullname-with-lists-last`, `fullname`, `nickname-with-lists-last`, and `nickname`. The default is `fullname-with-lists-last`.

`addressbook-formats`

This option allows you to specify the format to use when displaying the addressbook.

`alt-addresses`

This option provides a place for you to list alternative email addresses you might have. If set, the option affects the behavior of the Reply command and the + symbol in the MESSAGE INDEX, which denotes that a message has been addressed specifically to you. With respect to Reply, the `reply-to-all` option will exclude addresses listed here.

`bugs-address`

This option is normally not settable by user, being set in the PINE.CONF-FIXED file by the PMDF system manager.

`bugs-fullname`

This option is normally not settable by user, being set in the PINE.CONF-FIXED file by the PMDF system manager.

`character-set`

Specifies the character set which you are using for eight bit characters when composing your messages. Note that if your message includes only seven bit characters, it will be labelled as US-ASCII; the `character-set` option is only consulted if your message contains eight bit characters. If eight bit characters are used in your message, this value will be used to label your character set. The default, if this option is not set in your personal Pine resource file, will be the value, typically DEC-MCS, selected in the system-wide PINE.CONF file by the PMDF system manager.

`composer-wrap-column`

This value specifies the maximum columns the auto-wrapped lines will have in the Pine Composer. The normal default is 74.

`customized-hdrs`

You can add your own custom headers to all outgoing messages. Each header you specify here must include the header tag (Reply-To:, Approved:, etc.) and can optionally include a value for that header. If you want to see these custom headers each time you compose a message, you must add them to your default composer headers list (see below), otherwise they become part of the rich header set which you only see when you press the rich header (Ctrl/R) command.

`default-composer-hdrs`

Specifies a list of header lines to appear by default when you are in the composer. If you use this option, then only the header lines listed here will appear in the composer unless the CTRL/R, rich header, command is invoked. So, remember to always put To, From, Subject header lines here. For example,

```
default-composer-hdrs=To, Cc, Attchmnt, Subject, Reply-to
```

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`default-fcc`

“Fcc” stands for Folder Carbon Copy. This option specifies a folder in which to automatically file copies of messages you send. The default is “” which disables this option.

To enable automatically saving copies of your sent messages, explicitly set

```
default-fcc=foldername
```

where *foldername* is the name of the folder in which you want to save copies of sent messages, *e.g.*,

```
default-fcc=SENTMAIL
```

Or to save copies of only specified sent messages, do not set `default-fcc` and instead use the CTRL/R, Rich header command, while composing your message and fill in the Fcc: header line with the name of a folder. If your VMS MAIL profile has COPY_SELF on send or reply, Pine will automatically put your own address on the Cc: line. That is not the same as Fcc:, however, because the Cc: copy is sent to you as regular new mail, whereas, Fcc: puts a copy directly into a folder.

`default-saved-msg-folder`

This option determines the default folder name for “save message” operations, which can be overridden by the `saved-msg-name-rule` option. If not explicitly set, the default value MAIL is assumed on OpenVMS, to correspond to the normal VMS MAIL behavior of saving read messages to the OpenVMS MAIL folder named MAIL. Any valid folder collection, local or IMAP, can be specified.

`display-filters`

This option defines a list of text-filtering commands (programs or scripts) that can be used to filter text portions of received messages and then cause some desired action (*e.g.*, presentation in the MESSAGE TEXT display screen, exporting to a text file, *etc.*). For security reasons, the full path name of the filter command must be specified.

`download-command`

This option has no effect in PMDF Pine.

`download-command-prefix`

This option has no effect in PMDF Pine.

`editor`

Specifies a DCL command to use to invoke your editor; *e.g.*,

```
editor=EDIT/EDT
```

The system-wide default alternate editor is EDIT/TPU.

`empty-header-message`

If all of the To:, Cc: and Newsgroups: fields are empty when sending a message, Pine will put the value of this option in the To: address, so as to avoid problems with some mailers which mishandle empty headers.

`fcc-name-rule`

Determines the default folder name for Fcc: copies. Use one of the following: `default-fcc`, `by-recipient`, `last-fcc-used`, `by-nickname`, `by-nick-then-recvip`,

Pine User Agent

Configuration Options in the Pine Resource File

or `current-folder`. The default is `default-fcc` which specifies that the folder name specified with the `default-fcc` option is used.

`literal-signature`

With this option your actual signature, as opposed to the name of a file containing your signature, is stored in the Pine configuration file. If this is defined it takes precedence over the `signature-file` option. This is simply a different way to store the signature. The signature is stored inside your Pine configuration file instead of in a separate file.

`feature-list`

Specifies a list of features to enable. The default system-wide features are:

```
feature-list=enable-aggregate-command-set,  
enable-alternate-editor-cmd,  
enable-bounce-cmd,  
enable-flag-cmd,  
enable-full-header-cmd,  
enable-jump-shortcut,  
enable-suspend,  
enable-tab-completion
```

`feature-list` is additive: first the system-wide features are established and then your settings are established on top of the system-wide settings. To disable a feature set by the system-wide defaults, specify the feature name to be disabled with `no-` prepended to its name. For example

```
feature-list=no-enable-jump-shortcut,  
no-enable-suspend
```

The available features and their usages are shown in Table 7-1.

Table 7-1 Available Pine `feature-list` Features

Composer Preferences	
<code>alternate-compose-menu</code>	This feature controls the menu that is displayed when Compose is selected. If set, a list of options will be presented, with each option representing the type of composition that could be used. This feature is most useful for users who want to avoid being prompted with each option separately, or who want to avoid the checking of remote postponed or form letter folders.
<code>compose-cut-from-cursor</code>	This feature controls the behavior of the Ctrl/K command in the composer. If set, Ctrl/K will cut from the current cursor position to the end of the line, rather than cutting the entire line.
<code>compose-maps-delete-key-to-ctrl-d</code>	This feature affects the behavior of the DELETE key. If set, Delete will be equivalent to Ctrl/D, and delete the current character. Normally Pine defines the Delete key to be equivalent to Ctrl/H, which deletes the previous character.
<code>compose-rejects-unqualified-addr</code>	If set, addresses without an <code>@host</code> part will be rejected unless they match an addressbook nickname.
<code>compose-send-offers-first-filter</code>	If you have <code>sending-filters</code> configured, setting this feature will cause the first filter in the <code>sending-filters</code> list to be offered as the default instead of unfiltered, the usual default.

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Configuration Options in the Pine Resource File

Table 7-1 (Cont.) Available Pine feature-list Features

Composer Preferences	
<code>enable-alternate-editor-cmd</code>	Enables the CTRL/_ command which invokes the alternate editor.
<code>enable-alternate-editor-implicitly</code>	When set, the alternate editor will be automatically invoked when composing messages.
<code>enable-search-and-replace</code>	This feature modifies the behavior of Pine's composer. Setting this feature causes Pine to offer the "Ctrl/R Replace" subcommand, which allows you to search and replace text strings in a message you are composing, inside the "Ctrl/W Where is" command.
<code>enable-sigdashes</code>	<p>This feature enables support for the common USENET news convention of preceding a message signature with the special line consisting of the three characters "-- " (<i>i.e.</i>, dash, dash, and space).</p> <p>When enabled and a <code>signature-file</code> exists, Pine will insert the special line before including the file's text (unless the special line already exists somewhere in the file's text).</p> <p>In addition, when you Reply or Followup to a message containing one of these special lines and choose to include its text, Pine will observe the convention of not including text beyond the special line in your reply.</p> <p>See also <code>strip-from-sigdashes-on-reply</code> for a related feature.</p>
<code>quell-dead-letter-on-cancel</code>	<p>This feature affects Pine's behavior when you cancel a message being composed. Pine's usual behavior is to write the canceled message to a file named DEAD.LETTER in your home directory. Under some conditions (some routine), this can introduce a noticeable delay. Setting this feature will cause Pine NOT to write canceled compositions into the file.</p> <p>NOTE: Enabling this feature means <i>no</i> record of canceled messages is maintained.</p>
<code>quell-user-lookup-in-passwd-file</code>	Has no effect in PMDF Pine.
Reply Preferences	
<code>enable-reply-indent-string-editing</code>	<p>This feature affects the Reply command's "Include original message in Reply?" prompt. When enabled, it causes the "Edit Indent String" sub-command to appear which allows you to edit the string Pine would otherwise use to denote included text from the message being replied to. Thus, you can change Pine's default message quote character (usually an angle bracket) on a per message basis.</p> <p>Note that the configuration option <code>reply-indent-string</code> can be used to change what appears as the default string to be edited.</p>
<code>include-attachments-in-reply</code>	If set, MIME attachments from a message being replied to will automatically be included in the reply.
<code>include-header-in-reply</code>	If set, header lines from a message being replied to will be included in the reply.

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Configuration Options in the Pine Resource File

Table 7-1 (Cont.) Available Pine feature-list Features

Reply Preferences	
<code>include-text-in-reply</code>	If set, the content of a message being replied to will automatically be included in the reply.
<code>reply-always-uses-reply</code>	This feature controls an aspect of Pine's Reply command. If set, Pine will not prompt when a message being replied to contains a Reply-To: header value, but will simply use its value (as opposed to using the From: field's value). Using the Reply-To: address is usually the preferred behavior; however, some mailing list managers choose to place the list's address in the Reply-To: field of any message sent out to the list. In such cases, this feature makes it all too easy for personal replies to be inadvertently sent to the entire mail list, so be careful!
<code>signature-at-bottom</code>	Insert your signature at the bottom of the message instead of at the top in a reply or new message.
<code>strip-from-sigdashes-on-reply</code>	This feature doesn't do anything if the feature <code>enable-sigdashes</code> is turned on. However, if the <code>enable-sigdashes</code> feature is not turned on, then turning on this feature enables support for the convention of not including text beyond the sigdashes line when Replying or Following up to a message and including the text of that message. In other words, this is a way to turn on the signature stripping behavior without also turning on the dashes-adding behavior.
Sending Preferences	
<code>enable-8bit-esmtp-negotiation</code>	Has no effect in PMDF Pine.
<code>enable-delivery-status-notification</code>	This feature affects the behavior of Pine's mail sending. If set, this feature enables a subcommand in the composer's "Send?" confirmation prompt. The subcommand allows you to tell Pine to request the type of Delivery Status Notification (DSN) which you would like. You can request a delivery receipt upon successful delivery of your message, control whether you are notified regarding delays or failure in delivering the message, and control whether the entire contents of your message or just the headers will be returned in any failure notification. If you don't enable the DSN feature or if you don't turn it on for a particular message, the default is that you will be notified about failures, you might be notified about delays, and you won't be notified about successes. You will usually receive the full message back when there is a failure. If you turn on the DSNOpts the default is to return as much information as possible to you. That is, by default, the Success and Delay options are turned on and the full message will be returned on failure.
<code>enable-verbose-smtp-posting</code>	Has no effect in PMDF Pine

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Configuration Options in the Pine Resource File

Table 7-1 (Cont.) Available Pine feature-list Features

Sending Preferences	
<code>fcc-on-bounce</code>	This feature controls an aspect of Pine's behavior when bouncing a message. If set, normal FCC ("File Carbon Copy") processing will be done, just as if you had composed a message to the address you are bouncing to. If not set, no FCC of the message will be saved.
<code>fcc-only-without-confirm</code>	This features controls an aspect of Pine's composer. The only time this feature will be used is if you attempt to send mail which has no recipients but does have an Fcc. Normally, Pine will ask if you really mean to copy the message only to the Fcc. That is, it asks if you really meant to have no recipients. If this feature is set, you will not be prompted to confirm your intent to make only a copy of a message with no recipients.
<code>fcc-without-attachments</code>	This features controls the way FCC's (File Carbon Copies) are made of the messages you send. Normally, Pine saves an exact copy of your message as it was sent. When this feature is enabled, the "body" of the message you send (the text you type in the composer) is preserved in the copy as before; however all attachments are replaced with text explaining what had been sent rather than the attachments themselves. This feature also affects Pine's "Send ?" confirmation prompt in that a new "^F Fcc Attchmnts" option becomes available which allows you to interactively set whether or not attachments are saved to the Fcc'd copy.
<code>use-sender-not-x-sender</code>	Normally Pine adds a header line labeled X-Sender:, if the sender is different from the From: line. The standard specifies that this header line should be labeled Sender, not X-Sender:. Setting this feature causes Sender to be used instead of X-Sender:.
Folder Preferences	
<code>combined-subdirectory-display</code>	This feature affects the Folder List screen when the <code>combined-folder-display</code> feature is enabled. Normally, selecting a directory from the Folder List takes you into a new screen displaying only the contents of that directory. Enabling this feature will cause the contents of the selected directory to be displayed within the boundaries of the collection it is a part of. All previously displayed collections will remain in the screen.
<code>combined-folder-display</code>	This feature affects the folder list display screens. Normally, each folder list is viewed within its collection only. This command allows folder lists to be viewed within a single screen that combines the contents of all collections.
<code>enable-dot-folders</code>	When this feature is set, the setting of the feature <code>expanded-view-of-folders</code> has an effect. When this feature is set, folders beginning with dot or period (.) can be added and viewed.

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Configuration Options in the Pine Resource File

Table 7-1 (Cont.) Available Pine feature-list Features

Folder Preferences	
<code>enable-incoming-folders</code>	If set, this feature defines a pseudo-folder collection name "INCOMING MESSAGE FOLDERS". Initially, the only folder included in this collection will be your INBOX, which will no longer show up in your default saved-message folder collection. You can add more folders to the "INCOMING MESSAGE FOLDERS" collection by using the Add command of the FOLDER LIST menu.
<code>enable-good-list-mode</code>	This option is always enabled, whether marked or not, in PMDF Pine, as it causes Pine to adhere to the IMAP standard.
<code>expanded-view-of-folders</code> <code>quell-empty-directories</code>	Have folder lists pre-expanded in FOLDER LIST menu. This feature causes Pine to remove from the display any directories that do not contain at least one file or directory. This can be useful to prevent overly cluttered folder lists when a collection is stored on a server that treats all names as both a folder and a directory.
<code>separate-folder-and-directory-entries</code>	This feature affects folder collections wherein a folder and directory can have the same name. By default, Pine displays them only once, denoting that it is both a folder and directory by appending the folder name with the hierarchy character enclosed in square brackets. Enabling this feature will cause Pine to display such names separately marking the name representing a directory with a trailing hierarchy delimiter (typically the slash, /, character). The feature also alters the command set slightly. By default, the right-arrow descends into the directory, while hitting the Return key will cause the folder by that name to be opened. With this feature set, the Return key will open the highlighted folder, or enter the highlighted directory.
<code>single-column-folder-list</code>	This feature controls an aspect of Pine's FOLDER LIST screen. If set, the folders will be listed one per line instead of several per line in the FOLDER LIST display.
<code>vertical-folder-list</code>	This feature controls an aspect of Pine's FOLDER LIST screen. If set, the folders will be listed alphabetically down the columns rather than across the columns as is the default.
Address Book Preferences	
<code>combined-addrbook-display</code>	This feature affects the address book display screens. Normally, expanding an address book from the ADDRESS BOOK LIST screen will cause the remaining address books and directory servers to disappear from the screen, leaving only the entries of the expanded address book. If this feature is set, then the other address books will remain on the screen, so that all of the address books can be present at once.
<code>expanded-view-of-addressbooks</code>	When this feature is set, the setting of the feature <code>expanded-view-of-addressbooks</code> has an effect. Have multiple address books expanded when entering the ADDRESS BOOK menu.

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Configuration Options in the Pine Resource File

Table 7-1 (Cont.) Available Pine feature-list Features

Address Book Preferences	
<code>expanded-view-of-distribution-lists</code>	If this feature is set, then distribution lists in the address book screen will always be expanded automatically.
<code>ldap-result-to-addrbook-add</code>	If both the Directory option <code>use-implicitly-from-composer</code> and this feature are set, then when an implicit directory lookup is done from the composer you will automatically be prompted to add the result of the directory lookup to your address book.
Message Index Preferences	
<code>auto-open-next-unread</code>	Automatically opens the next folder in the <code>incoming-folders</code> or <code>news-collections</code> collections which contain unread mail.
<code>continue-tab-without-confirm</code>	Normally, when you use the <code>TAB NextNew</code> command and there is a problem checking a folder, you are asked whether you want to continue with the search in the following folder or not. This question gives you a chance to stop the <code>NextNew</code> processing. (The checking problem might be caused by the fact that the folder does not exist, or by an authentication problem, or by a server problem of some sort.) If this feature is set you will not be asked. It will be assumed that you do want to continue.
<code>delete-skips-deleted</code>	When set, the <code>Delete</code> command will skip to the next undeleted message.
<code>enable-cruise-mode</code>	This feature affects Pine's behavior when you hit the space bar at the end of a displayed message. Typically, Pine complains that the end of the text has already been reached. Setting this feature causes such keystrokes to be interpreted as if the <code>TAB</code> key had been hit, thus taking you to the next "interesting" message, or scanning ahead to the next incoming folder with "interesting" messages.
<code>enable-cruise-mode-delete</code>	This feature modifies the behavior of Pine's <code>enable-cruise-mode</code> feature. Setting this feature causes Pine to implicitly delete read messages when it moves on to display the next "interesting" message.
<code>mark-for-cc</code>	Beware when enabling this feature <i>and</i> the <code>expunge-without-confirm</code> feature! This feature affects Pine's MESSAGE INDEX display. By default, a '+' is displayed in the first column if the message is addressed directly to you. When this feature is set and the message is not addressed to you, then a '-' character is displayed if the message is instead Cc'd directly to you.
<code>tab-visits-next-new-message-only</code>	This feature affects Pine's behavior when using the <code>TAB</code> key to move from one message to the next. Pine's usual behavior is to select the next unread message or message flagged as "Important". Setting this feature causes Pine to skip the messages flagged as important, and select unread messages exclusively. Tab behavior when there are no new messages left to select remains unchanged.

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Configuration Options in the Pine Resource File

Table 7-1 (Cont.) Available Pine feature-list Features

Viewer Preferences	
<code>enable-msg-view-attachments</code>	This feature modifies the behavior of Pine's MESSAGE TEXT screen. Setting this feature causes Pine to present attachments in boldface. The first available attachment is displayed in inverse. This is the "selected" attachment. Pressing RETURN will cause Pine to display the selected attachment. Use the arrow keys to change which of the attachments displayed in boldface is the current selection.
<code>enable-msg-view-urls</code>	This feature modifies the behavior of Pine's MESSAGE TEXT screen. Setting this feature causes Pine to select possible URLs from the displayed text and display them in boldface for selection.
<code>enable-msg-view-web-hostnames</code>	This feature modifies the behavior of Pine's MESSAGE TEXT screen. Setting this feature causes Pine to select possible web hostnames from the displayed text and display them in boldface for selection. This can be useful when you receive messages referencing World Wide Web sites without the use of complete URLs; for example, specifying only "www.washington.edu/pine/" (which will not become a selectable item by setting the <code>enable-msg-view-urls</code> option) rather than explicitly specifying "http://www.washington.edu/pine/".
<code>enable-msg-view-addresses</code>	This feature modifies the behavior of Pine's MESSAGE TEXT screen. Setting this feature causes Pine to select possible email addresses from the displayed text and display them in boldface for selection.
<code>enable-msg-view-forced-arrows</code>	This feature modifies Up and Down arrow key behavior in Pine's MESSAGE TEXT screen when selectable Attachments, URL's, or web-hostnames are presented. Pine's usual behavior is to move to the next or previous selectable item if currently displayed or simply to adjust the screen view by one line. Setting this feature causes the UP and Down arrow key to behave as if no selectable items were present in the message.
<code>pass-control-characters-as-is</code>	This feature controls how certain characters contained in messages are displayed. If set, all characters in a message will be sent to the screen. Normally, control characters are automatically suppressed in order to avoid inadvertently changing terminal setup parameters.
<code>prefer-plain-text</code>	A message being viewed may contain alternate versions of the same content. Those alternate versions are ordered by the sending software such that the first alternative is the least preferred and the last alternative is the most preferred. Pine will normally display the most-preferred version that it knows how to display. This is most often encountered where the two alternate versions are a plain text version and an HTML version, with the HTML version listed last as the most preferred. If this option is set, then any plain text version will be preferred to all other versions.

Pine User Agent

Configuration Options in the Pine Resource File

Table 7-1 (Cont.) Available Pine feature-list Features

News Preferences	
<code>compose-sets-newsgroup-without-confirm</code>	When set, if you enter the composer while reading a news group, you will not be prompted as to whether you intend the message to be posted to the current newsgroup or not: it will be posted.
<code>enable-8bit-nntp-posting</code>	<p>This feature affects Pine's behavior when posting news.</p> <p>The Internet standard for exchanging USENET news messages (RFC 1036) specifies that USENET messages should conform to Internet mail standards and contain only 7bit characters, but much of the news transport software in use today is capable of successfully sending messages containing 8bit characters. Hence, many people believe that it is appropriate to send 8bit news messages without any MIME encoding. Moreover, there is no Internet standard for explicitly negotiating 8bit transfer, as there is for Internet email. Therefore, Pine provides the option of posting unencoded 8bit news messages, though not as the default. Setting this feature will turn OFF Pine's MIME encoding of newsgroup postings that contain 8bit characters.</p> <p>Note that articles can cross a path or pass through news transport software that is unsafe or even hostile to 8bit characters. At best this will only cause the posting to become garbled. The safest way to transmit 8bit characters is to leave Pine's MIME encoding turned on, but recipients who lack MIME-aware tools are often annoyed when they receive MIME-encoded messages.</p>
<code>news-approximates-new-status</code>	If set, all messages after the last deleted message will show up as new messages in a news group.
<code>news-deletes-across-groups</code>	<p>This feature controls what Pine does when you delete a message in a newsgroup that appears in more than one newsgroup. Such a message is sometimes termed a "crossposting" in that it was posted across several newsgroups.</p> <p>Pine's default behavior when you delete such a message is to remove only the copy in the current newsgroup from view when you use the "Exclude" command or the next time you visit the newsgroup. Enabling this feature causes Pine to remove every occurrence of the message from all newsgroups it appears in and to which you are subscribed.</p> <p>Note that as currently implemented, enabling this feature can increase the time it takes the Expunge command and newsgroup closing to complete.</p>
<code>news-offers-catchup-on-close</code>	This feature controls what Pine does as it closes a newsgroup. When set, Pine will offer to delete all messages from the newsgroup as you are quitting Pine or opening a new folder.

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Configuration Options in the Pine Resource File

Table 7-1 (Cont.) Available Pine feature-list Features

News Preferences	
<code>news-post-without-validation</code>	NNTP server is not queried as news groups are entered for posting. Validation can cause long delays on a slow link.
<code>news-read-in-newsrc-order</code>	The presentation order of the news groups will be what is in the NEWSRC. file.
<code>quell-extra-post-prompt</code>	By default, when you post a message to a newsgroup you are asked to confirm that you want to post with the question "Posted message may go to thousands of readers. Really post?" If this feature is set, you will not be prompted to confirm your intent to post to a newsgroup and your message will be posted.
Printer Preferences	
<code>enable-print-via-y-command</code>	This feature modifies the behavior of Pine's Print command. By default, Pine's print command is available by pressing the % key. (This command is a substantial change from Pine versions before 4.00 – where the print command was Y—based on numerous complaints about printing being invoked inadvertently, since Y also means "Yes".) This feature is provided for compatibility with the prior behavior of Pine; enabling this feature will cause Pine to recognize both the old command, Y for "Prynt", as well the new % method for invoking printing. Note that key menu labels are not changed as a result of enabling this feature.
<code>print-offers-custom-cmd-prompt</code>	When this feature is set, the print command will have an additional subcommand called "C CustomPrint". If selected, you will have the opportunity to enter any system print command –instead of being restricted to using those that have been previously configured in the printer setup menu.
<code>print-includes-from-line</code> <code>print-index-enabled</code>	Has no effect in PMDF Pine This feature controls the behavior of the Print command when in the MESSAGE INDEX screen. If set, the print command will give you a prompt asking if you want to print the message index, or the currently highlighted message. If not set, the message will be printed.
<code>print-formfeed-between-messages</code>	Setting this feature causes a formfeed to be printed between messages when printing multiple messages (via the "Apply Print" command).
Advanced Command Preferences	
<code>enable-aggregate-command-set</code>	Enables the following aggregate commands: ; (Select), Apply, and Zoom.

Pine User Agent

Configuration Options in the Pine Resource File

Table 7-1 (Cont.) Available Pine feature-list Features

Advanced Command Preferences	
<code>enable-arrow-navigation</code>	<p>This feature controls the behavior of the left and right arrow keys. If set, the left and right arrow keys will operate like the usual navigation keys < and >.</p> <p>If you set this feature, and do not like the changed behavior of the up/down arrow keys when navigating through the FOLDER LIST screen – first from column to column, if more than one folder is displayed per row, and then from row to row—you can either also want to set the feature <code>enable-arrow-navigation-relaxed</code>, <code>single-column-folder-list</code>, or use the Ctrl/P and Ctrl/N commands (instead of up/down arrow) keys to move up/down the list of folders in each column.</p>
<code>enable-arrow-navigation-relaxed</code>	<p>This feature controls the behavior of the left, right, up and down arrow keys in the FOLDER LIST screen when the <code>enable-arrow-navigation</code> feature is enabled.</p> <p>Normally, when the <code>enable-arrow-navigation</code> feature is set, the left and right arrow keys in the Folder List screen strictly track the commands bound to the < and > keys, and the up and down arrow keys move the highlight bar to the previous and next folder or directory name. When enabled, this feature returns the left, right, up and down arrow keys' functionality in the FOLDER LIST screen to what it was before enabling <code>enable-arrow-navigation</code>. In other words, left and right arrows move the highlight bar to the left or right, and the up and down arrows move it up or down.</p>
<code>enable-bounce-cmd</code>	<p>Enables the Bounce command.</p>
<code>enable-exit-via-less-than-command</code>	<p>If this feature is set, then on screens where there is an "Exit" command but no < command, the < key will perform the same function as the Exit command.</p>
<code>enable-flag-cmd</code>	<p>Enables you to set the status flags associated with a message. You can flag a message as being new (unread), deleted, answered, or important (marked in VMS MAIL).</p>
<code>enable-flag-screen-implicitly</code>	<p>The feature modifies the behavior of the "*" Flag" command (provided it too is enabled). By default, when the "*" Flag" command is selected, Pine offers a prompt to set one of several flags and also offers the option of entering the detailed flag manipulation screen via the Ctrl/T key. Enabling this feature causes Pine to immediately enter the detailed flag screen rather than first offer the simple prompt.</p>
<code>enable-full-header-cmd</code>	<p>Enables the HdrMode command which allows you to see a message in its entirety.</p>
<code>enable-goto-in-file-browser</code>	<p>This feature modifies the behavior of Pine's file browser. Setting this feature causes Pine to offer the "G Goto" command in the file browser. This command allows you to explicitly set the displayed directory. Pine's default behavior requires you to visit each intermediate directory when moving between two distant directories.</p>
<code>enable-jump-shortcut</code>	<p>When set, allows you to type just a message number to jump to that message.</p>

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Configuration Options in the Pine Resource File

Table 7-1 (Cont.) Available Pine feature-list Features

Advanced Command Preferences	
<code>enable-partial-match-lists</code>	This feature affects the subcommands available when Saving, or when Opening a new folder. If set, the subcommand <code>Ctrl/X ListMatches</code> will be available. This command allows you to type in a substring of the folder you are looking for and when you type <code>Ctrl/X</code> it will display all folders which contain that substring in their names.
<code>enable-tab-completion</code>	Enables TAB completion for folder opening and saving.
<code>enable-unix-pipe-cmd</code>	Has no effect in PMDF Pine.
Advanced User Preferences	
<code>allow-talk</code>	<p>By default, permission for others to “talk” to your terminal is turned off when you are running Pine. When this feature is set, permission is instead turned on. If enabled, you might see unexpected messages in the middle of your Pine screen from someone attempting to contact you via the “talk” program.</p> <p>If you do enable this feature and see a “talk” message, you must suspend or quit Pine before you can respond.</p>
<code>assume-slow-link</code>	If set, use screen optimizations to reduce the time taken to update the screen.
<code>auto-move-read-msgs</code>	If set Pine will automatically move all read messages to the <code>read-message-folder</code> when you quit. Moved messages are marked for deletion. This feature has no effect if no <code>read-message-folder</code> is set.
<code>auto-unzoom-after-apply</code>	This feature affects the behavior of the Apply command. If set, and if you are currently looking at a Zoomed Index view of selected messages, the Apply command will do the operation you specify, but then will implicitly do an “UnZoom”, so that you will automatically be back in the normal Index view after the Apply.
<code>auto-zoom-after-select</code>	This feature affects the behavior of the Select command. If set, the select command will automatically perform a zoom after the select is complete.
<code>confirm-role-even-for-default</code>	If you have roles, when you Reply to or Forward a message, or Compose a new message, Pine will search through your roles for one which matches. Normally, if no matches are found you will be placed into the composer with no opportunity to select a role. If this feature is set, then you will be asked to confirm that you don’t want a role.
<code>disable-keymenu</code>	If this feature is set the command key menu that normally appears on the bottom two lines of the screen will not usually be there.

Pine User Agent

Configuration Options in the Pine Resource File

Table 7-1 (Cont.) Available Pine feature-list Features

Advanced User Preferences	
<code>disable-take-last-comma-first</code>	<p>Normally, when TakeAddr is used to copy an address from a message into an address book entry, Pine will attempt to rewrite the full name of the address in the form</p> <p style="padding-left: 2em;">Last, First</p> <p>instead of</p> <p style="padding-left: 2em;">First Last</p> <p>It does this because many people find it useful to sort by Last name instead of First name. If this feature is set, then the TakeAddr command will not attempt to reverse the name in this manner.</p>
<code>enable-dot-files</code>	<p>When this feature is set, files beginning with a dot or period (.) will be visible in the file browser. For example, you'll be able to select them when using the browser to add an attachment to a message.</p>
<code>enable-fast-recent-test</code>	<p>This feature controls the behavior of the TAB key when traversing folders in the optional incoming-folders collection or in optional news-collections.</p> <p>When the TAB (Next New) key is pressed, the default behavior is to explicitly examine the status of the folder for the number of recent messages (messages delivered since the last time it was viewed). Depending on the size and number of messages in the folder, this test can be time consuming.</p> <p>Enabling this feature will cause Pine to only test for the existence of any recent messages rather than the obtain the count. This is much faster in many cases. The downside is that you're not given the number of recent messages when prompted to view the next folder.</p>
<code>enable-mail-check-cue</code>	<p>This feature causes an asterisk to appear in the upper left-hand corner of the screen whenever Pine checks for new mail, and two asterisks whenever Pine saves (checkpoints) the state of the current mailbox to disk.</p>
<code>enable-mouse-in-xterm</code>	<p>Has no effect in PMDF Pine.</p>
<code>enable-newmail-in-xterm-icon</code>	<p>Has no effect in PMDF Pine.</p>
<code>enable-rules-under-take</code>	<p>Normally, the Take command takes addresses from a message and helps you put them into your Address Book. If you use Rules for Indexcolors, Roles, Filtering, or Scoring; you might find it useful to be able to Take information from a message's headers and put it into a new Rule. When this feature is set, you will be given an extra prompt which gives you the choice to Take into the Address Book or Take into a rule.</p>
<code>enable-suspend</code>	<p>Enables CTRL/Z as a command to spawn a subprocess.</p>

Pine User Agent

Configuration Options in the Pine Resource File

Table 7-1 (Cont.) Available Pine feature-list Features

Advanced User Preferences	
expose-hidden-config	<p>If set, this causes configuration options and features which are normally hidden from view to be editable in the Setup/Config screen.</p> <p>The purpose of this feature is to allow you to change configuration features and variables which are normally hidden. This is particularly useful if you are using a remote configuration, where it is difficult to edit the contents manually, but it may also be used on a local pinerc configuration file.</p> <p>If set, several configuration variables and features which are normally hidden from view will show up in the Setup/Configuration screen. They will be at the bottom of the configuration screen. You can find them by searching for the words "hidden configuration".</p> <p>Note that this is an advanced feature which should be used with care. The reason that this part of the configuration is normally hidden is because there is a significant potential for causing problems if you change these variables. If something breaks after a change try changing it back to see if that is what is causing the problem. There are also some variables which are normally hidden because they are manipulated through Pine in other ways.</p>
expunge-only-manually	<p>Normally, when you close a folder which contains deleted messages you are asked if you want to expunge those messages from the folder permanently. If this feature is set, you won't be asked and the deleted messages will remain in the folder. If you choose to set this feature you will have to expunge the messages manually using the eXpunge command, which you can use while in the MESSAGE INDEX screen. If you do not expunge deleted messages the size of your folder will continue to increase until you are out of disk space.</p>
expunge-without-confirm expunge-without-confirm-everywhere	<p>Will not ask for confirmation when expunging.</p> <p>This features controls an aspect of Pine's eXpunge command. If set, you will not be prompted to confirm your intent before the expunge takes place. This feature sets this behavior for all folders, unlike the <code>expunge-without-confirm</code> feature which works only for incoming folders.</p>
preserve-start-stop-characters	<p>Controls how CTRL/S and CTRL/Q are interpreted when input to Pine.</p>
quell-folder-internal-msg quell-lock-failure-warnings quell-status-message-beeping	<p>Has no effect in PMDF Pine.</p> <p>Has no effect in PMDF Pine.</p> <p>This feature affects Pine's behavior when it displays status message (e.g., Error complaints, New mail warnings, etc.). Setting this feature will not affect the display of such messages, but will cause those that emit a beep to become silent.</p>
quit-without-confirm save-will-not-delete	<p>Disables Pine's exit confirmation prompt.</p> <p>If set, the Save command will not mark the message as deleted after it is copied to the destination folder.</p>

Pine User Agent

Configuration Options in the Pine Resource File

Table 7-1 (Cont.) Available Pine feature-list Features

Advanced User Preferences	
<code>save-will-advance</code>	If set, the Save command will advance you to the next message.
<code>save-will-quote-leading-froms</code>	If set, the Save command will add a leading > character in front of message lines beginning with From. This is not useful when saving to a VMS MAIL folder.
<code>select-without-confirm</code>	If this option is set, then for the Save, Export, and Goto commands (for which you can use CTRL/T to get a list of folders) the selected folder name will be used without confirmation.
<code>show-cursor</code>	This feature controls an aspect of Pine's displays. If set, the system cursor will move to convenient locations in the displays. For example, to the beginning of the status field of the highlighted index line, or to the highlighted word after a successful Wherels command. It is intended to draw your attention to an "interesting" spot on the screen.
<code>show-plain-text-internally</code>	This feature modifies the method Pine uses to display Text/Plain MIME attachments from the Attachment Index screen. Normally, the "View" command searches for any externally defined (usually via the mailcap file) viewer, and displays the selected text within that viewer. Enabling this feature causes Pine to ignore any external viewer settings and always display text with Pine's internal viewer.
<code>show-selected-in-boldface</code>	Aggregate selected messages will be shown in bold face instead of having an "X" in the first column of the index.
<code>try-alternative-authentication-driver-first</code>	This feature controls how Pine provides authentication credentials to the IMAP server you are connecting to. Normally, Pine and the server negotiate the most secure method to exchange such information. However, some methods aren't available for negotiation, and thus require pre-configuration (typically, per server) on Pine's part. This feature allows Pine to implicitly try an alternative to the default methods that might have been added to Pine when it was built.
<code>use-current-dir</code>	Use the current directory instead of the home directory for Export, Attachment Save, CTRL/R Include File, and CTRL/J Attach File.
<code>use-subshell-for-suspend</code>	This feature affects Pine's behavior when process suspension is enabled and then activated via the Ctrl/Z key. Pine suspension allows one to temporarily interact with the operating system command shell without quitting Pine, and then subsequently resume the still-active Pine session. When the <code>enable-suspend</code> feature is set and subsequently the Ctrl/Z key is pressed, Pine will normally suspend itself and return temporary control to Pine's parent shell process. However, if this feature is set, Pine will instead create an inferior subshell process. This is useful when the parent process is not intended to be used interactively.

Pine User Agent Configuration Options in the Pine Resource File

folder-collections

Specifies a list of one or more collections where mail is stored and can be read with Pine. The first collection in the list is the default collection for Save operations. The system-wide default is

```
folder-collections=[]
```

which specifies the default mail file on your local system. See Section 7.4.1 for further details on the use of this option.

Note that this option is not presented as such from within Pine. Though you can set the option manually by editing your Pine resource file, more commonly the option is controlled by using the L (collectionList) option from under the SETUP menu.

folder-sort-rule

This option controls the order in which folder list entries will be presented in the FOLDER LIST screen. The default is alphabetical.

form-letter-folder

You can specify a folder in which you will be storing form letters: messages that you have composed that are intended to be sent in their original form repeatedly.

global-address-book

You can specify the name of one or more files containing readonly global address books, which can be shared by several or all users. OpenVMS file protections are honored and can be used to limit access.

Note that this option is not presented as such from within Pine. Though you can set the option manually by editing your Pine resource file, more commonly the option is controlled by using the Addressbook menu from under the SETUP menu.

goto-default-rule

This value affects Pine's behavior when you use the Goto command. The default is inbox-or-folder-in-recent-collection.

image-viewer

Any value set with this option is ignored. Your mailcap file is used instead.

inbox-path

Normally no value should be specified for this option. The default is INBOX which is interpreted as the VMS MAIL NEWMAIL folder. Unexpected results can occur if any folder other than INBOX is specified.

However, one sort of setting which is allowable, (though seldom used), is to point this option at a remote POP3 server. In this case, POP3 access to the new messages on the remote system will be used. The syntax is

```
inbox-path={pop3servername/POP3}INBOX
```

to log in under the same username, or

```
inbox-path={pop3servername/POP3/USER=username}INBOX
```

to log in to the remote POP3 server under a different username. When logging in under a different username, you might be prompted to enter a password upon accessing the

Pine User Agent

Configuration Options in the Pine Resource File

folder.

Note that new mail broadcast notifications are not performed while doing POP access; you must exit and reenter Pine in order to receive such new mail notifications.

incoming-archive-folders

This is a generalization of read-message-folder.

incoming-startup-rule

This value affects Pine's behavior when opening the INBOX folder or one of the INCOMING MESSAGE FOLDERS folders. By default the value is first-unseen, which means that when the INBOX folder or another incoming folder is first opened, the current message is set to the first unseen message which has not been marked deleted, or the last message if all of the messages have been seen previously.

index-format

This option specifies the format in which the folder index is displayed. The display format can be specified by listing special tokens in the order you want them displayed. The tokens available include STATUS, FULLSTATUS, MSGNO, DATE, SIZE, DESCRIPSIZE, SUBJECT, FROMORTO, FROM, and TO. The tokens are separated by spaces.

initial-keystroke-list

Specifies a comma-separated list of commands (keystrokes) which Pine executes on startup. Items in this list are usually just characters. Special values include:

SPACE, CR Space character and carriage return key

F1-F12 Function keys F1 through F12

UP, DOWN, Up, down, left, and right cursor keys

LEFT, RIGHT

Function and character keys cannot be mixed in the list despite the fact that you can, in some cases, mix them while interactively running Pine. You can always use all character keys in the startup list even if you are using function keys normally, or vice versa.

last-time-prune-questioned

This option is used to record the year and month when you were last asked by Pine whether to automatically prune those folders specified with the pruned-folders option. The recording format is YYYY.MM as an offset from 1900; *e.g.*, 100.6 specifies June, 2000. Note that if you manually set this option to a time in the future, then Pine will leave your messages alone and not ask you again about pruning your folders until one month past the specified time is reached. No value for this option should be set in the system-wide configuration file.

Note that this option is not presented from within Pine, for instance, from within the SETUP menu's Config screen, since it is normally an internal option automatically updated by Pine. So if you want to set this option explicitly, you must do so by manually editing your Pine resource file.

last-version-used

This option is controlled by Pine and is used to track the version of Pine last used. Whenever Pine detects a difference between the recorded version number and that of the

Pine User Agent Configuration Options in the Pine Resource File

currently running version, it outputs a new version message. This option should not be set in the system-wide configuration file.

Note that this option is not presented from within Pine, for instance, from within the `SETUP` menu's `Config` screen, since it is normally an internal option automatically updated by Pine.

`mail-check-interval`

This option specifies how often, in seconds, Pine should check for new mail. The default is 150 seconds. Specify a 0 value if you don't want Pine to check for new mail automatically.

`mailcap-search-path`

This variable is used to replace Pine's default mailcap file search path. It takes one or more file names (full paths must be specified) in which to look for mail capability data. The default for PMDF Pine if this variable is not specified is `PMDF_INIT:MAILCAP`.

`mimetype-search-path`

This variable is used to replace Pine's default `MIME.TYPES` file search path. It takes one or more file names (full paths must be specified) in which to look for file-name-extension to MIME type mapping data. The default for PMDF Pine if this variable is not specified is `PMDF_INIT:MIME.TYPES`.

`news-active-file-path`

Has no effect in PMDF Pine.

`news-collections`

This option has a format very similar to the `folder-collections` option. With it, you can specify a collection label as well as the name of the NNTP system; *e.g.*,

```
news-collections=Good-news *{news.host/nntp} []
```

As a target of the `GotoFldr` command, you can specify a news address in the format of

```
*{news.host:port/nntp}newsgroup.foo.bar
```

However, the port number can not be specified with the `news-collections` option.

Note that this option is not presented as such from within Pine. Though you can set the option manually by editing your Pine resource file, more commonly the option is controlled by using the `L` (`collectionList`) option from under the `SETUP` menu.

`news-spool-directory`

Has no effect in PMDF Pine.

`newsrsrc-path`

This option overrides the default name Pine uses for your "newsrsrc" news status and subscription file. If set, Pine will take this value as the full pathname for the desired newsrsrc file.

If this option is not set, PMDF Pine looks for the file `NEWSRC` in the `PMDF_INIT:` directory. (By default, `PMDF_INIT` is a logical which translates to `SYSS$LOGIN`. Users wanting to keep their Pine and other PMDF initialization files elsewhere can redefine the `PMDF_INIT` logical.)

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Configuration Options in the Pine Resource File

nntp-server

Specifies the TCP/IP host name of your NNTP server for news posting and news collections.

personal-name

Your personal name to appear in outgoing mail; *i.e.*, the personal name field to use in your return address. If not specified, the personal name set in your VMS MAIL profile will be used. This option should not be specified in the system-wide configuration file.

personal-print-command

Specifies a DCL command to use to print messages. This option corresponds to item 3 in the printer menu and can be set from within Pine using the printer setup menu. This option should not be set in the system-wide configuration file.

OpenVMS print queues often have a dollar sign, \$, in their name. Note that, as described above in Section 7.6.1, the dollar sign is a special character in the Pine resource file and must be quoted with a backslash character, \. So if, for instance, you want to define your personal print command to print to a queue named NEARBY\$PRINTER, set the option as

```
personal-print-command=PRINT/QUEUE=NEARBY\ $PRINTER
```

postponed-folder

Specifies the name of the folder where postponed message are kept. This folder can be looked at just like any other folder, and you can also delete messages from it. However, when you are continuing a postponed message, the operations are limited to just selecting the message you want to continue. Canceling such a message will result in its deletion from the postponed folder.

printer

Specifies the Pine printer setting and must be one of `attached-to-ansi`, `attached-to-ansi-no-formfeed`, the value of the `personal-print-command` option, or `PRINT/DELETE` (the standard OpenVMS print command). This option should not be set in the system-wide configuration file.

pruned-folders

You can specify a list of folders which Pine will offer to prune for you once a month.

read-message-folder

Specifies a folder to file read messages to upon exiting Pine. If set, then upon exiting Pine you will be prompted as to whether read messages from the INBOX folder should be moved to the `read-message-folder`. The default value for this option is `MAIL`.

reply-indent-string

When you reply to a message, and the original message is included in the reply, the text of the original message is indented and prefixed by this character string. Usually set to `>`.

reply-leadin

This option is used to customize the content of the introduction line that is included when replying to a message and including the original message in the reply. The normal default (what you will get if you delete this variable) looks something like:

```
On Sat, 24 Oct 2012, Fred Flintstone wrote:
```

where the day of the week is only included if it is available in the original message.

Pine User Agent Configuration Options in the Pine Resource File

saved-msg-name-rule

Determines the default folder to save messages to. The value `default-folder` specifies that saved messages be filed to the MAIL folder. If the value `by-sender` is specified, then Pine will offer to file the message to a folder with the same name as the message's sender. If the value `last-folder-used` is specified, then Pine will offer to file the message to whatever folder you used last.

scroll-margin

This option controls when Pine's line-by-line scrolling occurs. Typically, when a selected item is at the top or bottom screen edge and the UP or DOWN (and Ctrl/P or Ctrl/N) keys are struck, the displayed items are scrolled down or up by a single line.

This option allows you to tell Pine the number of lines from the top and bottom screen edge that line-by-line paging should occur. For example, setting this value to one (1) will cause Pine to scroll the display vertically when you move to select an item on the display's top or bottom edge.

By default, this variable is zero, indicating that scrolling happens when you move up or down to select an item immediately off the display's top or bottom edge.

sending-filters

This option defines a list of text-filtering commands (programs and scripts) that can be selectively invoked to process a message just before it is sent. If set, the Composer's Ctrl/X (Send) command will allow you to select which filter (or none) to apply to the message before it is sent. For security reasons, the full path of the filter program must be specified.

signature-file

Specifies a signature file, the contents of which is to be appended to messages as a signature. It typically contains information such as your name, email address and organizational affiliation. Pine adds the signature into the message as soon as you enter the composer so you can choose to remove it or edit it on a message by message basis. Signature file placement in message replies is controlled by the `signature-at-bottom` setting in the feature list. The default name for the signature file is PINE.SIGNATURE. This file always resides in your PMDF_INIT: directory.

sort-key

Specifies the ordering to use to sort message directory listings. Any ordering other than the default chronological (`arrival`) ordering is likely to be slow.

speller

Instead of invoking the SPELL command, the value of this option will name a different command to be invoked when CTRL/T command is used in the Pine Composer.

status-message-display

If this is set to a positive number, it causes the cursor to move to the status line whenever a status message is printed and pause there for this many seconds. It will probably only be useful if the `show-cursor` feature is also turned on.

upload-command

This option has no effect in PMDF Pine.

upload-command-prefix

This option has no effect in PMDF Pine.

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Configuration Options in the Pine Resource File

`url-viewers`

This option affects Pine's handling of URLs that are found in messages you read. Normally, only URLs Pine can handle directly are automatically offered for selection in the "Message Text" screen. When one or more applications capable of deciphering URLs on their command line are added here, Pine will choose the first available to display URLs it cannot handle directly.

`user-domain`

This option is not user settable, though system managers can set it on a system wide basis in the PINE.CONF-FIXED file.

`viewer-hdrs`

You can change the default list of headers that are viewed by listing the headers you want to view here. If the headers listed are present in the message, then they will be shown. The order of the headers you list will be honored. If the special value `all-except` is included as the first header in the `viewer-hdrs` list, then all headers in the message except those in the list will be shown. The values are all case insensitive.

`viewer-overlap`

This option specifies an aspect of Pine's Message Viewing screen. When the space bar is used to page forward in a message, the number of lines specified by the `viewer-overlap` variable will be repeated from the bottom of the screen. That is, if this was set to two lines, then the bottom two lines of the screen would be repeated on the top of the next screen. The normal default value is 2.

7.7 OpenVMS System Configuration for PMDF Pine

PMDF Pine uses PMDF extensively. PMDF must be installed and configured on the system for Pine to function. Pine uses PMDF to send mail, to parse addresses, and to save copies of messages you have sent, if the Pine `default-fcc` option is set. Once PMDF is configured and installed on a system, PMDF Pine is usually ready for use, although Section 7.7.1 and Section 7.7.2 below discuss two installation issues to check, and Section 7.7.3 below describes tailoring the Pine environment on a system wide basis.

In particular, note that Pine does not, by default, use IMAP to talk to your local system, so **it is not necessary to have an IMAP server running on your system just to use Pine**. (Only if a user were to specifically request that Pine treat the local system as if it were instead a remote system with an IMAP server, by specifying the `imap-host` field when accessing a folder collection, would PMDF Pine attempt to make an IMAP connection to the local system.)

Pine is installed by PMDF with the privileges `SYSPRV` and `CMKRNL`. Without those privileges, users can not send mail, although they can still read mail.

7.7.1 Providing UCX Emulation

UCX\$IPC_SHR is an executive-mode logical name pointing to a shareable image supplied by your TCP/IP vendor. If this logical is not defined, then either TCP/IP is not installed, or, in the case of a package other than DEC's TCP/IP Services for OpenVMS (a.k.a. UCX), UCX emulation was not installed when the package was installed. In order to use the TCP/IP functionality of PMDF Pine, this logical must be defined and be pointing to the appropriate image for your TCP/IP package. Moreover, the image must be installed as a known image,

```
$ INSTALL UCX$IPC_SHR /OPEN/SHARED
```

If you are running Pine on a system without any TCP/IP software, a dummy shareable image PMDF_EXE:UCX_DUMMY.EXE is provided with PMDF. Your system manager should define a system-wide, executive-mode logical named UCX\$IPC_SHR which points to it and then install it:

```
$ DEFINE/SYSTEM/EXEC UCX$IPC_SHR PMDF_EXE:UCX_DUMMY.EXE  
$ INSTALL UCX$IPC_SHR /OPEN/SHARED
```

Note: If you install any TCP/IP package later, remember to deassign the logical name or you won't have a functional TCP/IP.

The definition of the logical and installation of the image should be made part of the system startup procedure. Note that the installation of the image can be effected through the site-supplied PMDF_COM:SITEIMAGE.DAT file which uses the same format as the Process-supplied PMDF_COM:PMDFIMAGE.DAT file.

7.7.2 Users' Subprocess Quota

Pine uses subprocesses to perform several of its tasks. As such, users without subprocess quota cannot do any of the following:

- use a customized printing command,
- view image or video attachments,
- use the spell checker, or
- use an alternate editor.

A side effect of using subprocesses in Pine when you have a remote IMAP connection is that the connection might timeout while waiting for a subprocess to complete. This is especially likely when using an alternate editor to compose a message.

7.7.3 System-Wide Configuration Files

A system manager can tailor Pine's environment on a per system basis by the use of files described below. These files should all be world readable.

Pine User Agent

OpenVMS System Configuration for PMDF Pine

PMDF_TABLE:PINE.CONF

This file is shipped with PMDF and contains a default system-wide configuration for Pine. A new version is shipped with every PMDF release, so you should keep a copy of your customizations. This default configuration provides for one folder collection with the default mail file on the local system.

PMDF_TABLE:PINE.CONF-FIXED

You can create this Pine resource file and place in it options which you do not want users to be able to change or override. This file, as supplied with PMDF, initially contains the same information as hardcoded in the program for the `bugs-address` and `bugs-fullname` options with the local Postmaster being the one to receive the bug reports. You can change it to a different address if necessary, but we suggest you direct it to a local support address.

PMDF_TABLE:PINE.INFO

When this file exists, the information contained in it is presented to the user as `Local Support Contacts` from the main menu's help screen.

PMDF_TABLE:MIME.TYPES

This file provides a basic set of file extension to MIME type mappings. Users can supplement or override these defaults with their own choices in their own file, via the `mimetype-search-path` option in their Pine resource file.

7.7.3.1 Precedence of Configuration Settings

There are potentially four sources of configuration settings which are shown below in decreasing order of precedence:

1. Unchangeable, system-wide settings from the `PMDF_TABLE:PINE.CONF-FIXED` file.
2. Per-user settings from the user's `PMDF_INIT:PINE.PINERC` file.
3. System-wide settings from the `PMDF_TABLE:PINE.CONF` file.
4. Default Pine values.

One exception to the above precedence scheme is the `feature-list` option which is cumulative. In order to turn off a feature, you have to negate it by prepending `no-` in front of an individual feature.

8 The PMDF MAIL Utility

PMDF MAIL is an extended version of VMS MAIL which is better equipped for dealing with the message formats used by PMDF. In PMDF MAIL you can work with your messages as real RFC 822/RFC 1521 (MIME) messages; *e.g.*, not have to specify IN%" " when supplying addresses, pick and choose which header lines you want to see displayed, display or generate multipart messages with file attachments, images, audio components, *etc.*

PMDF MAIL reads mail from your VMS MAIL mailbox, accessing it through the callable MAIL interface. PMDF will continue to deliver your mail to this mailbox and you can use any VMS MAIL compatible user agent, including PMDF MAIL, to read your messages from your mailbox. Profile settings which you make in PMDF MAIL are made to the system-wide VMS MAIL profile database and thus will be seen by VMS MAIL.

Notable differences between PMDF MAIL and VMS MAIL are discussed in Section 8.13.

8.1 Getting Started

To invoke PMDF MAIL, issue the DCL command

```
$ PMDF MAIL
EMAIL>
```

Exit PMDF MAIL with the EXIT or QUIT commands. Pressing CTRL/Z at the EMAIL> prompt will also exit you from PMDF MAIL.

While entering commands to the EMAIL> prompt, the following command interaction features are available:

- *Command abbreviation:* commands can be abbreviated to their simplest, unambiguous form.
- *Command completion:* use the `TAB` key to automatically complete a command. If the command is ambiguous, it will be completed to the fullest extent possible.
- *Command querying:* at any point while entering a command, a question mark, `?`, can be entered to obtain immediate help on what to do next or what options are available.
- *Input files:* command files can be input and executed by using the command `<infile` with `infile` the name of the file to input. When two angle brackets are used, `<<infile`, the commands read from the input file will not be echoed as they are executed.
- *Logging:* your session can be logged to an output file by using the command `>outfile` with `outfile` the name of the log file. All commands you enter and information printed by PMDF MAIL will be written to the log file. To log only the commands you type, use the command `>>outfile`.

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To obtain help on individual commands, enter `HELP` at the `EMAIL>` prompt. With the `HELP` command you can obtain detailed descriptions of each command. To obtain a list of the available commands, simply press the `[?]` key. You can use this key at any point while entering commands. PMDF MAIL will respond with a list of your available options.

8.2 New Mail Notification

When you receive new mail messages while you are logged in, a notification message will appear on your terminal:

```
New mail on node NAPLES from IN%"MROCHECK@EXAMPLE.COM"
```

In this example, you have received a new mail message from `MROCHECK@EXAMPLE.COM`. The node which actually delivered this message to your mailbox was `NAPLES`.

With a message of the form

```
You have 7 new messages.
```

you will be notified if you have any new, unread messages both when you log in and when you invoke PMDF MAIL. See Section 8.3 for directions on how to read your mail messages.

8.3 Reading Mail

Messages that you receive are usually stored in files called “mail files”. Mail files have a default file type of `.MAI` and are stored in your login directory. Your default mail file, `MAIL.MAI`, is created in your login directory the first time you receive a mail message.

8.3.1 New Messages

To read a new mail message, invoke PMDF MAIL. You will be prompted for a command. If you have unread messages, their count will be displayed.

```
$ PMDF MAIL
You have 1 new message.
EMAIL>
```

To read the new message, press `[RETURN]`. The message will be displayed on your screen.

EMAIL> `RETURN`

Message NEWMAIL 1

26-JUL-2012 10:50:43 1

Date: 26 Jul 2012 10:50:31 -0700 (PDT) 2
From: mrochek@example.com
To: misha@new.com
Subject: Numerical methods for ODEs

Misha,

There seems to be something wrong with two of the numerical methods coded in DEQSOLVE, or at least they give results that seem wrong.

-Mrochek

EMAIL>

Press the `RETURN` key to continue reading your new messages. The message

`%EMAIL-E-NOMOREMSG`, no more messages

will appear when there are no more new messages to read.

In the sample message shown above, note that the date and time that the message was received and stored in your mailbox, 1 , will typically differ from the time the message was sent to you, 2 , by its author.

If a message is too long to be displayed on one screen, press `RETURN` to display the remaining text of the message. To skip the remaining part of a message and display the next message, enter the NEXT command. Other useful commands are

BACK	Display the previous message
NEXT	Display the next message
FIRST	Display the first message
LAST	Display the last message
BACK/PAGE	Display the previous page
NEXT/PAGE	Display the next page
FIRST/PAGE	Display the first page
LAST/PAGE	Display the last page

To read a new mail message received while you are in PMDF MAIL, use the READ/NEW command.

8.3.2 Old Messages

To read old mail messages, first invoke PMDF MAIL. If you have no new messages, then you can begin reading your old messages with a press of the `RETURN` key. If, however, you do have new messages but do not want to read them at this time, then issue the command SELECT MAIL. This will select your old messages which you can then begin reading by pressing `RETURN` .

Use the READ command to display a particular message. First, however, you will need to know the number of the message to display. Determine the message number with the DIRECTORY command:

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EMAIL> **DIRECTORY**

#	From	Date	Subject	MAIL
1	mrochek@example.com	26-JUL-2012	Numerical methods for ODEs	
2	beckett@example.com	19-AUG-2012	RE: Binary files	
3	ralph@example.com	12-JUN-2012	Thanks for the help...	
4	bob@xanadu.com.	28-JUL-2012	Department meeting - Monday, August 26	

EMAIL> **READ 4**

With the **SEARCH** command, you can locate a particular message. The **SEARCH** command displays the first message containing a specified phrase:

EMAIL> **SEARCH MEETING**

Message MAIL 4 28-JAN-2012 11:13:21

Date: 28 Jun 2012 11:12:18 -0700 (PDT)
From: bob@example.com
To: engineering@example.com
Subject: Department meeting - Monday, July 1

Just a reminder that the monthly department meeting is at 3:00 PM next Monday.

Bob

EMAIL>

To continue a search, enter the **SEARCH** command again but without the phrase parameter:

EMAIL> **SEARCH**

When no more messages can be found containing the specified phrase, the message

%EMAIL-E-NOTFOUND, no messages containing 'MEETING' found

will appear.

To begin a new search, issue the **SEARCH** command along with the new phrase to search for. Each new search will begin with the first message, message number 1.

8.3.3 Selecting Which Header Lines to Display

One very useful feature of PMDF MAIL is its ability to only display those message header lines which you want to see. You express your preferences with the **SET HEADER_TRIMMING** command and then save those preferences to the file `PMDF_INIT:PMDF_MAIL_HEADERS.OPT` with the `/OUTPUT` option of that command. Then, each time you run PMDF MAIL, only the header lines which you want to see will be displayed. On occasions when you do want to see the full header of a given message, use the `/NOTRIM_HEADER` qualifier which is accepted by all of the message reading commands. See the description of the **SET HEADER_TRIMMING** command for an example showing how to specify your own set of header trimming preferences.

While you might find it tempting to trim all but a very few header lines, it is strongly recommended that you always display (*i.e.*, not trim) the following list of header lines: Bcc, Cc, Comments, Content-type, Date, From, Sender, Subject, To, Resent-Bcc, Resent-Cc, Resent-Date, Resent-From, Resent-Sender, and Resent-to. In practice, you often will not see many of these header lines. However, in those instances when they are present in a message header, it is important that you be aware of them. Take, for instance, the Sender: header line. It indicates who the *authenticated* sender of the message you are reading is. It is generally only present in the message header when it is not the same as the From: address. Why is this important? It tells you who really sent the message. If you had merely seen the From: line you might have been confused; especially if it is a piece of forged mail you are looking at.

PMDF_INIT is a logical which ordinarily points to your login directory. You can change the definition of this logical to point to another directory and then place your PMDF_MAIL_HEADERS.OPT file in the directory specified by the new definition of the logical.

Your system manager can also provide a PMDF_MAIL_HEADERS.OPT file which will be used should you not have one of your own. This file, which will be used system-wide by all users lacking their own, should be named PMDF_MAIL_HEADERS.OPT and kept in the PMDF_TABLE: directory. It should, of course, be world readable.

8.3.4 Reading Multipart Messages

When you read a multipart message, it will be presented to you part by part. Any application, audio, image, or video parts will be displayed or played if possible. When you reach the end of a message part, PMDF MAIL will let you know if there are additional parts. Simply pressing return will read the next part, if any. The NEXT/PART and BACK/PART commands can be used to skip back and forth between message parts.

PMDF MAIL is capable of displaying the application subtypes DDIF and PostScript, both of which it will display with the OpenVMS CDA VIEWER utility. To view other application subtypes, you need to establish your own application viewing command which you then make known to PMDF MAIL with a mailcap file. See Section 8.3.5 for information on mailcap files.

The video subtype MPEG will be displayed using the MPEG_PLAY video viewer. To view other video subtypes, use a mailcap file.

The following image subtypes are recognized and supported by PMDF MAIL:

- DDIF
- JPEG
- PostScript
- XBM
- GIF
- PBM
- PPM
- XBITMAP
- JFIF
- PGM
- TIFF

Note that some of these subtype names are redundant. These subtype names are also accepted if they are preceded with an "X-". When these image subtypes are encountered, they will be displayed with the XV image viewer. The only exceptions to this are PostScript and DDIF, which will be displayed with the OpenVMS CDA VIEWER utility. Unrecognized subtypes are displayed with the Xloadimage viewer. Xloadimage supports the following image formats:

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- CMU Window Manager raster files
- Faces Project images
- Fuzzy Bitmap images (FBM)
- GIF images
- G3 FAX images
- McIDAS area files
- MacPaint images
- PC Paintbrush images (PCX)
- Portable Bitmap images (PBM, PGM, PPM)
- Sun monochrome and RGB raster files
- Utah Raster Toolkit images (RLE)
- X pixmap files
- X10 and X11 bitmap files
- X Windows dump files

As with the application type, you can establish your own commands for viewing images with a mailcap file.

Finally, message parts of type/subtype audio/basic will be played by writing the raw data to the SOA0: device, if available. This device is only available on Alpha and VAXstation 4000 workstations. The SET SPEAKER command can be used to select whether the internal or external speaker is used by default. A mailcap file can be used to specify alternate means of replaying audio messages.

8.3.5 Mailcap Files

With a mailcap file you can specify how PMDF MAIL should display different types of application, audio, image, text, and video messages or message parts. The format of a mailcap file is described by RFC 1524, "A User Agent Configuration Mechanism For Multimedia Mail Format Information". A copy of this RFC can be found in the PMDF_ROOT:[DOC.RFC] directory. Mailcap files cannot be used by captive users.

Mailcap files have the name MAILCAP. with no extension (*i.e.*, file type). You should place your mailcap file in your login directory. If you want to keep it elsewhere then redefine the PMDF_INIT logical to point to where you want to keep that file and other PMDF MAIL files such as your header trimming file.¹

Each entry from the mailcap file describes how to display a message type/subtype pair, (*e.g.*, image/gif, video/mpeg, *etc.*). At present, PMDF MAIL only uses entries for the message types application, audio, image, text, and video. Entries for the types message and multipart as well as entries for unknown type are ignored.

PMDF MAIL presently uses mailcap files for viewing purposes only. Thus, only the type/subtype, view-command, test, and nametemplate fields are used from mailcap entries:

```
type/subtype; view-command; [test=test-command;]  
[nametemplate=%s.file-type;] [x-needsXterminal;] [x-wait;]
```

PMDF MAIL also supports two private fields: x-needsXterminal and x-wait. x-needsXterminal specifies that the mailcap entry should be skipped if the user is not using an X Windows display; x-wait specifies that PMDF MAIL should pause execution until the subprocess has exited.

¹ Mailcap files are pointed at by the PMDF_MAILCAP_DIR logical. By default, that logical translates to PMDF_INIT: and PMDF_TABLE:. PMDF_INIT, in turn, translates to SYSSLOGIN. All mailcap files located via the PMDF_MAILCAP_DIR logical search list will be processed. The list is read from left to right; entries from earlier files (files to the left) have precedences over later files (files to the right).

Entries in a mailcap file take precedence over PMDF MAIL's built-in message viewing rules. Thus, you can override PMDF MAIL's viewing rules with a mailcap file. However, any viewing command procedure set with a SET command (*e.g.*, SET AUDIO_COMMAND) will override both mailcap entries and built-in rules for the same message type.

If a `test` field is specified, then a subprocess will be spawned to execute the specified `test-command`. If that command returns either a successful status code (an odd value) or zero, then the test will be considered successful; treating a status code of zero as a success is for compatibility with UNIX-style return codes.

For the fields `test`, `view-command`, and `nametemplate`, the patterns `%s`, `%h`, and `%t` will be replaced, respectively, with the name of the file containing the message part to process, a title to associate with the message part (*e.g.*, NEWSMAIL 12.2), and the content type/subtype for the message part.

A viewing command, if selected, will be executed from a spawned subprocess. Unless `x-wait` is specified, it is the responsibility of that subprocess to delete the message part file after viewing the message part.

Sample mailcap file entries are shown in Example 8-1.

Example 8-1 Example Mailcap Entries

```
# PostScript files
application/postscript; VIEW/INTERFACE=DECWINDOWS %s/FORMAT=PS; \
  x-needsXterminal; x-wait
image/postscript; VIEW/INTERFACE=DECWINDOWS %s/FORMAT=PS; x-needsXterminal; \
  x-wait;
# Images
image/*; XV -wname %h %s; x-needsXterminal; x-wait;
# Audio
audio/*; AUDIO %s; test = AUDIO_TEST;
```

8.3.6 Reading Messages With Control Characters

Messages which contain 7-bit or 8-bit control characters can cause problems when they are displayed, if those control characters are treated as commands to the terminal. Such control characters can be filtered out by using the `/FILTER_CTRL` qualifier on the PMDF MAIL command when an interactive session is started. This qualifier can also be specified on any individual command which displays a message (such as READ or NEXT). When filtering is turned on, each control character will be replaced by a text representation of its hexadecimal value, in the format “=XX”.

Be aware that if a message has been read with filtering, the filtered version of the text is what will be used for any further operations, such as FORWARD, REPLY, EXTRACT, or PRINT. To use the original version instead, reread the message with `/NOFILTER_CTRL`. Or better, read it with `/NOMIME/NOFILTER_CTRL` which prevents PMDF MAIL from parsing out and decoding the original MIME structure of the message at all.

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8.3.7 Copying Messages to External Files

You can copy a mail message to a file with the EXTRACT command:

```
EMAIL> READ 4
Message MAIL 4                                     28-JAN-2012 11:13:21
Date: 28 Jun 2012 11:12:18 -0700 (PDT)
From: bob@example.com
To: engineering@example.com
Subject: Department meeting - Monday, July 1

Just a reminder that the monthly department meeting is at 3:00 PM next
Monday.

Bob

EMAIL> EXTRACT/NOHEADER MEETING.TXT
```

In the above example, message number 4 is read. Next its content is copied to the file MEETING.TXT. The /NOHEADER qualifier specifies that only the message content (*i.e.*, the text of the message) is to be copied to the file.

8.3.8 Receiving Files

When you receive messages containing files, you can extract them to an external file with the EXTRACT command. Note that the EXTRACT command will, when you are reading a multipart message, extract only the last read message part. To extract several parts to individual files, just read a part, extract it with the EXTRACT command, and then read the next part with the NEXT/PART command. If you want to extract the entire message to a file, use the EXTRACT/ENTIRE command.

See Section 1.1.8 for an example PMDF MAIL session showing how to extract a received file from a message to an external file. Additional examples are given in the documentation of the EXTRACT command.

8.4 Sending Mail

You can send mail to others while within PMDF MAIL or directly from DCL.

Note: PMDF MAIL has a maximum line length of 1022 characters. If you try to send a file or forward a mail message that contains lines longer than this maximum, you will get the following error:

```
%EMAIL-E-MSGWRTERR, message write error
```

For files, you must modify the file to make sure all of the lines in it are shorter than the maximum. For mail messages, you can extract them to files, then edit the files to make the lines shorter than the maximum.

8.4.1 Sending Messages From DCL

From DCL, you can send a file as a message to one or more users with the command

```
$ PMDF MAIL/SUBJECT="subject" file-spec "recipient-address"
```

where *file-spec* is the name of the file to send and *recipient-address* is the addressee (or addressees) to whom to send the file.

For instance, the command

```
$ PMDF MAIL/SUBJECT="Your report" CRITIQUE.TXT JOHN
```

sends the file CRITIQUE.TXT to the local user JOHN. To specify more than one recipient address, separate each address with commas. For instance,

```
$ PMDF MAIL/SUBJECT="Price Quote" quote5.txt "bob@example.com",  
"sue@example.com"
```

Wildcard characters are not allowed in the file specification; if not specified, the file type is assumed to be .TXT. The /SUBJECT qualifier is optional and can be omitted. See Section 8.14 for a complete description of the available qualifiers.

8.4.2 Sending Messages From Within PMDF MAIL

After invoking PMDF MAIL, enter the SEND command to create and send a mail message. You are prompted for the addresses of the intended recipients, the subject of the message (optional), and the text of the message (again, optional). In the following example, a message is sent to the local user BECKETT:

```
EMAIL> SEND  
To: BECKETT  
Subject: Lunch?  
Enter your message below. Press CTRL/Z when complete, or CTRL/C to quit:  
Hungry yet? Interested in lunch?  
I'm ready to go whenever you are.  
Mrochek  
[CTRL/Z]  
EMAIL>
```

Once CTRL/Z is pressed, the message is sent. Anytime prior to pressing CTRL/Z, you can cancel the message by pressing CTRL/C.

To use the editor when sending a mail message interactively, use the /EDIT qualifier

```
EMAIL> SEND/EDIT
```

Note: After answering the To: and Subject: prompts, the editor will be invoked. In the editor you will see the message header with the Date:, To:, From:, Subject:, and other header

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lines. Enter your message below those header lines. *Be sure to leave a blank line between the last header line and the first line of your message.* While you can alter the contents of the header lines and even delete optional header lines such as the Subject: header line, *do not delete all of the header lines! If you delete the recipient information, To:, Cc:, and Bcc:, then the message will have no recipients and will therefore not be sent.*

Once you have finished composing the message, save the message being edited and exit the editor. To cancel the send operation, exit the editor without saving the message. The default editor is EDT. For that editor, you would exit by pressing CTRL/Z and then entering the EXIT command. To cancel the send, you would press CTRL/Z and then enter the QUIT command.

The /EDIT qualifier can also be used with the FORWARD, READ and REPLY commands. By entering /EDIT when invoking PMDF MAIL,

```
$ PMDF MAIL/EDIT
```

you instruct PMDF MAIL to always put you in the editor when you compose new messages or reply to messages. See Section 8.9.2 for further details.

Should a message send attempt fail for some reason, you can often recover the message by resending it and specifying /LAST. This will resend the last message which you were working on.

8.4.3 Sending a File

You can send a file either from DCL with the PMDF MAIL command, or from within PMDF MAIL with the SEND command. See Section 8.4.1 for directions on sending files from DCL.

From within PMDF MAIL, use the SEND command. The message that you send can be just a file, or a message with one or more files attached to it. In either case, PMDF MAIL automatically tries to encode any files that might require special handling (*e.g.*, binary files), based on analysis of the file name. This process doesn't always work, so it might be necessary to specify /BLOCK to force binary file handling.

PMDF uses the MIME message format and encodings (RFC 1521) to construct messages containing files. Such messages can be decoded and read with a MIME-aware mailer or user agent such as PMDF and PMDF MAIL.

For instance, to send the two files TEST1.DAT and TEST2.DAT to the address bob@example.com, use the command

```
EMAIL> SEND TEST1.DAT,TEST2.DAT
To: bob@example.com
Subject: Two files you wanted
EMAIL>
```

You can, if you want, include a note with the message, perhaps explaining which file is which. To do this, use the /INSERT qualifier:

```
EMAIL> SEND/INSERT TEST1.DAT,TEST2.DAT
To: bob@example.com
Subject: Two files you wanted
Enter your message below. Press CTRL/Z when complete, or CTRL/C to quit:
Bob,

Below, please find attached the two files which you requested. The
first attachment is the data from the first wind tunnel mockup; the
the second attachment the data from the second mockup.

Sue
[CTRL/Z]
EMAIL>
```

To edit the message before actually sending it, use the /EDIT qualifier. That is, use the SEND/EDIT command. When in the editor you should see a section reading

```
[**** Insert text here ****]
```

Delete that line and insert your message starting where that line was. Once you are finished in the editor and are ready to send the message, save your edits and exit from the editor. From EDT, the default editor, this is accomplished by pressing CTRL/Z and entering the EXIT command. To cancel the SEND operation, use the QUIT command instead of the EXIT command.

8.4.4 Sending Messages to Mailing Lists

If you frequently send mail to the same group of users, you might find it helpful to use a mailing list (also referred to as a distribution list). See Section 9.3.3 for directions on setting up a mailing list with the PMDF DB utility.

8.5 Deleting Mail

To delete a mail message, either specify the number of the mail message as the parameter of the DELETE command or read the message (thereby making it the current message) and enter the DELETE command without any parameters or qualifiers. For example, to select and delete message number 4, use the following commands:

```
EMAIL> READ 4
Message MAIL 428-JUN-2012 11:13:21

Date: 28 Jun 2012 11:12:18 -0700 (PDT)
From: bob@math.stateu.edu
To: faculty@math.stateu.edu
Subject: Department meeting

Just a reminder that the monthly department meeting is at 3:00 PM next
Monday (7/1). We still lack another volunteer to help Max out with graduate
applications this year.
```

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Bob

```
EMAIL> DELETE
```

Alternatively, you can issue the single command

```
EMAIL> DELETE 4
EMAIL>
```

to delete message number 4.

To delete one or more mail messages, specify a comma-separated list of message numbers. You can also specify a range of numbers. In the following example, messages 1, 3, 6 through 8, and 10 are deleted:

```
EMAIL> DELETE 1,3,6-8,10
EMAIL>
```

Deleted messages are placed in a special holding area called the WASTEBASKET folder. During a PMDF MAIL session, you can recover any deleted messages by moving them out of the WASTEBASKET folder. See Section 8.6 for a discussion on folders and how to move messages between them. When you exit from PMDF MAIL (or switch mail files), all messages from the WASTEBASKET folder will be purged unless you have previously issued the SET NOAUTO_PURGE command.

8.6 Organizing Your Mail

Two levels of organization are possible with PMDF MAIL: you can organize groups of messages into folders, and you can organize groups of folders into mail files. If you have been using PMDF MAIL, then you've already encountered three folders: the NEWMAIL folder, the MAIL folder, and the WASTEBASKET folder. New, unread mail messages are kept in the NEWMAIL folder. After you have read a new message, it is automatically moved to the MAIL folder with your other "old" messages. Deleted messages are moved to the WASTEBASKET folder from which they are eventually purged. You can create additional folders and organize your messages amongst the folders.

You can have any number of mail files; each mail file can contain any number of folders; and each folder can contain any number of mail messages. Most users use just one mail file and simply organize their messages using folders. However, if your mail file becomes large (500 blocks or more), you might want to create additional mail files and move some of your older messages or larger folders to separate files. This will help improve PMDF MAIL's performance which decreases with increasing file size.

By default you have one mail file named MAIL.MAI. You can create additional mail files and move messages to them. This is useful, for instance, for archiving old messages. You might want to archive all memos from 2012 in a mail file named MEMOS_2012.MAI. Within that mail file, you could organize the messages amongst the twelve folders JAN, FEB, MAR, APR, *etc.*

A folder is created the first time you move a message into it. Likewise for mail files. Use the COPY or MOVE commands to move messages between folders and mail files. A folder is deleted once the last message in it is deleted or moved elsewhere. See Section 8.6.3 for more information on deleting folders.

To move between mail files, use the SET FILE command. Use the SELECT or DIRECTORY command to move between folders. The SELECT and DIRECTORY command can also be used to move between mail files. The name of the folder you are currently in is displayed at the top right hand corner of directory listings and message displays. Use the DIRECTORY/FOLDER command to list all existing folders in the current mail file.

By default, your account has one mail file named MAIL.MAI which usually contains the three folders:

NEWMAIL

New messages are stored in your NEWMAIL folder. When you start up PMDF MAIL and have new messages, you are placed in the NEWMAIL folder. Once you select a different folder, reselect the NEWMAIL folder, or exit PMDF MAIL, any new messages which have been read but not deleted or moved will automatically be moved to your MAIL folder. Use the SET NOAUTO_NEWMAIL command to prevent read new messages from being moved to MAIL.

MAIL

The MAIL folder contains any messages which you have read but not deleted or moved elsewhere. If, when you start up PMDF MAIL, you do not have any new messages, then you will be placed in the MAIL folder.

WASTEBASKET

Deleted messages are stored in the WASTEBASKET folder and kept there until you exit PMDF MAIL or issue a PURGE command. Upon exiting PMDF MAIL, any messages remaining in the WASTEBASKET folder will be purged. Use the SET NOAUTO_PURGE command to disable this automatic purging of the WASTEBASKET folder.

8.6.1 Creating and Modifying Folders

Use the following commands to create and manipulate mail folders:

COPY folder-name

Place a copy of the current message into the specified folder, folder-name. If the folder does not exist, you will be prompted for confirmation before it is created. In the example below, the message currently being read is copied to the folder MEMOS:

```
EMAIL> COPY MEMOS
Folder MEMOS does not exist.
Do you want to create it (Y/N, default is N)? Y
%EMAIL-I-NEWFOLDER, folder MEMOS created
EMAIL>
```

In the next example, the /MESSAGES qualifier is used to copy messages 1 through 5 to the MEMOS folder:

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```
EMAIL> COPY/MESSAGES=1-5 MEMOS
EMAIL>
```

An optional mail file name can also be specified following the folder name.

MOVE folder-name

Move the current message to the specified folder. If the folder does not exist, you will be prompted for confirmation before it is created. In the example below, the message currently being read is moved to the JOKES folder:

```
EMAIL> MOVE JOKES
EMAIL>
```

An optional mail file name can also be specified following the folder name.

To select a different mail file to work in, use the SET FILE command. The SHOW FILE command can be used to display the current mail file. Note that when you select a different mail file with the SET FILE command, the WASTEBASKET folder of the current mail file will be purged.

8.6.2 Selecting Folders

The name of the folder you are currently using is displayed in the top right hand corner of the terminal screen by the READ or DIRECTORY commands. You can read and manipulate only those messages that are in the current folder.

You can display the names of the folders in your current mail file with the DIRECTORY/FOLDER command.

```
EMAIL> DIRECTORY/FOLDER
Listing of folders in D1: [MISHA]MAIL.MAI;1
  Press CTRL/C to cancel listing
CONFERENCES          DECUS
JOKES                 MAIL
MEETINGS             MEMOS
NOTES                 OLD_MEMOS_92
OLD_MEMOS_93         RECIPES
WASTEBASKET
EMAIL>
```

To select a new folder as your current folder, use one of the following commands:

SELECT folder-name

Selects the specified folder, folder-name, as the current folder:

```
EMAIL> SELECT RECIPES
%EMAIL-I-SELECTED, 3 messages selected
EMAIL>
```

An optional mail file name can also be specified following the folder name.

DIRECTORY folder-name

Selects the specified folder, folder-name, as the current folder and lists the messages in that folder.

EMAIL> **DIRECTORY RECIPES**

#	From	Date	Subject	RECIPES
1	mrochek@example.co	18-JUN-2012	Vienna sausages with mustard	
2	beckett@daisy-co	20-AUG-2012	Bagels with scallion cream cheese	
3	fresnel@tintop.i	28-JUN-2012	Mouse fricasse	

EMAIL>

An optional mail file name can also be specified following the folder name.

READ folder-name message-number

Selects the specified folder, folder-name, as the current folder and displays the specified message, message-number.

EMAIL> **READ RECIPES 2**

Message RECIPES 2 20-AUG-2012 18:53:01

Date: 20 Aug 2012 21:52:18 -0400 (EDT)
From: beckett@daisy-hill.puppy.farm.com
To: rex@summer.example.com
Subject: Bagels with scallion cream cheese

2 Tbsp chopped green onions
1/2 Cup Pittsburgh or Philadelphia cream cheese
6 Bagels

The night before, mix the green onions and cream cheese. Refrigerate overnight. Obtain fresh bagels from Bagel Land on Murray Avenue. Cut the bagels in half, lightly toast, and then spread with generous amounts of the scallion cream cheese.

Enjoy!

EMAIL>

8.6.3 Deleting Folders

To delete a folder, delete or move elsewhere all the messages in the folder. In the following example, the RECIPES folder is deleted by moving the first message to another folder and deleting the remaining messages.

```
EMAIL> SELECT RECIPES
%EMAIL-I-SELECTED, 3 messages selected
EMAIL> MOVE/MESSAGE=1 MROCHEK
EMAIL> DELETE/ALL
EMAIL>
```

The PMDF MAIL Utility

Protection of Mail Files

8.7 Protection of Mail Files

Your mail files are protected such that no one else can read them and so that you cannot accidentally delete them. For your mail files, read and write access are granted to you and the system. All other users are denied access of any form. The system requires read and write privileges so that mail can be delivered to you and so that your mail files can be backed up.

See the description of the OpenVMS SET PROTECTION command should you want to change the protections of one or more of your mail files. To delete a mail file, you will need to set the “owner” protection to include delete access.

8.8 Placing Your Mail Files in a Subdirectory

By default mail files and mail messages larger than 3 blocks are stored in separate files. These files have names of the form

MAIL\$nnnnnnnnnnnnnnnnnnnnnn.MAI

and reside in your “mail” directory. By default, your mail directory is your login directory. Mail message files are deleted from your mail directory when you delete mail messages from within PMDF MAIL. Should you delete a message file from outside of PMDF MAIL, you will be met with an error when you next try to read that message from within PMDF MAIL.

To prevent these files from cluttering up your login directory, you can move them to a subdirectory of your login directory. Do this from within PMDF MAIL with the SET MAIL_DIRECTORY command:

```
EMAIL> SET MAIL_DIRECTORY/LOG [.MAIL]
%EMAIL-I-CREATED, D1:[SUE.MAIL] created
%EMAIL-S-RENAMED, D1:[SUE]MAIL.MAI;1 renamed to D1:[SUE.MAIL]MAIL.MAI;1
%EMAIL-S-RENAMED, D1:[SUE]FOOD.MAI;1 renamed to D1:[SUE.MAIL]MEMOS.MAI;1
%EMAIL-S-RENAMED, D1:[SUE]MAIL$8E9A5A4500050097.MAI;1 renamed to
D1:[SUE.MAIL]MAIL$8E9A5A4500050097.MAI;1
%EMAIL-S-RENAMED, D1:[SUE]MAIL$8E9A5A4600050097.MAI;1 renamed to
D1:[SUE.MAIL]MAIL$8E9A5A4600050097.MAI;1
%EMAIL-I-MODRECORDS, 1 record modified
EMAIL>
```

8.9 Editing Operations

As discussed previously, your editor can be invoked from within PMDF MAIL. This allows you, for instance, to use an editor when composing messages. As discussed in Section 8.9.1, there are two ways for you to express your choice of editor.

Normally, you instruct PMDF MAIL when to invoke the editor on a command-by-command basis with the /EDIT qualifier. However, when you invoke PMDF MAIL you can instruct PMDF MAIL to always invoke the editor for specific operations (*e.g.*, send operations, reply operations, *etc.*). See Section 8.9.2 for details.

Finally, with the PMDF MAIL/EDIT=KEPT command, you can instruct PMDF MAIL to always use the same editor subprocess. PMDF MAIL will attach to the process for all editing operations. Information as to what input file to edit and output file to produce is passed to the editor subprocess via logicals in the LNMSJOB logical table. See Section 8.9.3 for details.

8.9.1 Selecting an Editor

When you use the EDIT command or the /EDIT qualifier with the ANSWER, SEND, FORWARD, READ, REPLY, and DIRECTORY commands, an editor is invoked from which you can compose or edit your message. PMDF MAIL provides two methods for selecting which editor to use for editing operations. The first method is controlled with the SET EDITOR command while the second method is controlled through the MAIL\$EDIT logical. If the MAIL\$EDIT logical is defined, it will take precedence over any SET EDITOR setting.

If neither of these methods is used, then the EDT editor will be used to for editing.

To select system-wide a different choice of editor, use the SET EDITOR/SYSTEM_DEFAULT command. Individual users can then override this with either the SET EDITOR command or the MAIL\$EDIT logical.

8.9.1.1 The SET EDITOR Command

Use the SET EDITOR command to specify which editor you would like to use. For instance, to select TPU as the default editor, issue the command

```
EMAIL> SET EDITOR TPU
EMAIL>
```

Use the SHOW EDITOR command to determine what your editor selection is set to:

```
EMAIL> SHOW EDITOR
Your editor is TPU.
EMAIL>
```

Any SET EDITOR setting will be ignored if the MAIL\$EDIT logical is defined and translates to a non-blank string. This logical is described in Section 8.9.1.2.

The PMDF MAIL Utility

Editing Operations

8.9.1.2 The MAIL\$EDIT Logical

The logical MAIL\$EDIT, if it is defined, will override any SET EDITOR setting. If the translation value has the form CALLABLE_x, then “x” is assumed to be the name of a callable editor accessible through a shareable image. Otherwise, the translation value is assumed to be a DCL command to issue from a spawned subprocess.

When MAIL\$EDIT translates to a string of the form CALLABLE_x, then the remainder of the translation value must be the name of an editor which has a shareable image pointed at by the logical xSHR. The image must contain a routine named x\$EDIT which takes as its two arguments the input and output file names passed by reference to string descriptors. The shareable image must be installed and the logical must be an executive mode logical so that the routine can be dynamically loaded and linked from PMDF MAIL which is a privileged image.

If MAIL\$EDIT’s translation value does not begin with “CALLABLE_”, then the translation value is assumed to be a DCL command to execute from a spawned subprocess. Usually, MAIL\$EDIT will be defined as follows

```
$ DEFINE MAIL$EDIT "@file-spec"
```

with *file-spec* the full file specification of a DCL command procedure. Prior to executing the command, four parameters will be appended to it: the input file name, the output file name, the PMDF MAIL command which was issued, and the initial line number on which to place the edit insertion point (*i.e.*, the line to initially place the cursor on). The third parameter will always be one of EDIT, DIRECTORY, DIRECTORY/FOLDER, FORWARD, READ, REPLY, or SEND.

8.9.2 Controlling Editor Operations

When you first invoke PMDF MAIL you can specify which commands always invoke the editor and whether or not to include the message header in the editor buffer. This is done with the /EDIT qualifier of the PMDF MAIL command.

The /EDIT qualifier accepts the following keyword values:

ALL

Always invoke the editor in conjunction with all commands that accept the /EDIT qualifier.

DIRECTORY

Always invoke the editor to display DIRECTORY and DIRECTORY/FOLDER listings.

FORWARD

Always invoke the editor to edit messages being forwarded with the FORWARD command.

HEADER

NOHEADER

By default the message’s header is always displayed in the editor. To inhibit this, specify /EDIT=NOHEADER.

The PMDF MAIL Utility

Editing Operations

KEPT[=editor-process-name]

Attach to an editor subprocess to perform editing operations. See Section 8.9.3 for further details

NONE

Never invoke the editor unless explicitly requested to do so with the /EDIT qualifier.

READ

Always invoke the editor to display messages being read with the READ, CURRENT, BACK, NEXT, FIRST, and LAST commands.

REPLY[=EXTRACT[=quote]]

Always invoke the editor to edit messages being replied to with the ANSWER or REPLY commands. If the optional EXTRACT keyword is specified, then the content of the message being replied to will be included in the reply. To specify a text string to use to quote each line of the extracted message text, specify a value for the EXTRACT keyword. For instance, to quote each line with the two characters "> ", invoke PMDF MAIL with the command

```
$ PMDF MAIL/EDIT=REPLY=EXTRACT="> "
```

SEND

Always invoke the editor to compose messages being sent with the MAIL or SEND commands.

For instance, to cause the editor to always be invoked for messages you send or reply to, and to not include the message header in the editor, you could invoke PMDF MAIL with the command

```
$ PMDF MAIL/EDIT=(SEND,REPLY=EXTRACT="> ",NOHEADER)
```

You might even consider defining in your LOGIN.COM command procedure a command which will always invoke PMDF MAIL using your editing choices. For example, the DCL command

```
$ PMAIL == "PMDF MAIL/EDIT=(SEND,REPLY=EXTRACT="> ",NOHEADER)
```

makes it so that whenever you issue the command PMAIL, PMDF MAIL is invoked with /EDIT=(SEND,REPLY=EXTRACT="> ",NOHEADER).

Remember the following when you use the /EDIT qualifier:

- When you do not specify any keywords with /EDIT, the default is /EDIT=(SEND,REPLY).
- After you save your edits and exit from the editor, you complete your SEND, REPLY, or FORWARD operation.
- When you want to cancel a SEND, REPLY, or FORWARD operation, exit from the editor without saving your changes.

The PMDF MAIL Utility

Editing Operations

8.9.3 Using a “Kept” Editor

Normally, for each editing operation, PMDF MAIL starts up a new editing session. This might even involve spawning a new subprocess for every operation. This overhead can be avoided by keeping an editing subprocess and attaching to it for each editing operation. When PMDF MAIL is invoked with the command

```
$ PMDF MAIL/EDIT=KEPT
```

it will attempt to attach to the subprocess with the name `Edit_x` whenever the editor is needed. `x` is the name of the PMDF MAIL process's terminal device with all underscores, dashes, and colons removed. For instance, for the terminal device `_FTA123`: the expected subprocess name would be `Edit_FTA123`. The name is truncated to fifteen characters.

If no subprocess exists with the name `Edit_x`, or if that subprocess cannot be attached to, then PMDF MAIL will attempt to spawn a process with that name and have it execute the command specified with the `MAIL$EDIT` logical. Appended to this command will be the four parameters described in Section 8.9.1.2; the job logical names described below will also be defined. This behavior allows PMDF MAIL to actually create the editing subprocess itself if it does not already exist.⁶ For this reason, it is recommended that in your login command procedure you define `MAIL$EDIT` to be the name of a command procedure to invoke your editor; *e.g.*,

```
$ DEFINE MAIL$EDIT "@PMDF_ROOT:[DOC.EXAMPLES]MAILEDIT.COM"
```

This procedure would then simply invoke your editor. For instance, the command procedure shown below invokes TPU.

```
$ VERI = 'F$VERIFY(0)'  
$ ! MAILEDIT.COM - Startup TPU as this process's editor  
$ !  
$ ! P1 = Input file name  
$ ! P2 = Output file name  
$ ! P3 = Ignored; used by PMDF MAIL  
$ ! P4 = Starting position  
$ !  
$ DEFINE/NOLOG SYS$INPUT SYS$COMMAND:  
$ P2 = F$EDIT(P2, "COLLAPSE")  
$ P4 = F$EDIT(P4, "COLLAPSE")  
$ IF P2 .NES. "" THEN P2 = "/OUTPUT=' P2' "  
$ IF P4 .NES. "" THEN P4 = "/START_POSITION=' P4' "  
$ EDIT/TPU' P2' ' P4' ' P1'  
$ VERI = F$VERIFY (VERI)
```

Keep in mind that the `MAIL$EDIT` command procedure will be executed from a subprocess; there is no need for it itself to spawn out a subprocess to run your editor.

When the editor is attached to, it should make use of the following job logicals to determine which input file to edit and where to write its output:

⁶ PMDF MAIL will not attempt to delete this process when exiting.

The PMDF MAIL Utility

Editing Operations

Logical Name	Usage
PMDF_MAIL_INPUT_FILE	Input file to edit.
PMDF_MAIL_OUTPUT_FILE	Output file to generate; to cancel mail operation, do not generate an output file.
PMDF_MAIL_COMMAND	Interactive PMDF MAIL command which requested the editing operation. Always one of EDIT, DIRECTORY, DIRECTORY/FOLDER, FORWARD, READ, REPLY, or SEND.
PMDF_MAIL_START_POSITION	If possible, place the edit insert point on this line of the input file. That is, initial line of the file to place the cursor at. First line is line 1.

A “kept” editor used with PMDF MAIL should do the following:

1. When the editor subprocess is attached to it should check to see if the PMDF_MAIL_INPUT_FILE logical is defined. If it is, then it was invoked by PMDF MAIL. If the logical is not defined then ignore the following steps.
2. If PMDF_MAIL_INPUT_FILE translates to a single space character, then an EDIT command with no input file was specified. (PMDF_MAIL_COMMAND should translate to “EDIT”.) In this case, do whatever seems appropriate. If PMDF_MAIL_INPUT_FILE does not translate to a single space, then it specifies a file to be edited. Present this file to the user for editing; if possible the editing cursor should initially be placed on the line of the input file specified by the PMDF_MAIL_START_POSITION logical.
3. When the user is finished editing, the edited message should be written to the file PMDF_MAIL_OUTPUT_FILE provided that it does not translate to a single space.⁷ The editor subprocess should then attach to its parent process, assumed to be the process running PMDF MAIL.
4. If the user wants to cancel the operation which invoked the editor, then no output file should be generated. The editor subprocess should simply reattach to its parent.

Use the command

```
$ PMDF MAIL/EDIT=KEPT=process-name
```

to specify an explicit process name, *process-name*, for the editor subprocess. PMDF MAIL will then try to attach to the subprocess with the specified name; if no subprocess with that name exists, then a subprocess will be created and given that name.

⁷ Note that at present if PMDF_MAIL_OUTPUT_FILE specifies a file name then it is the same name as that specified by PMDF_MAIL_INPUT_FILE unless the PMDF_MAIL_COMMAND translates to EDIT in which case the user might have explicitly specified a different output file name.

The PMDF MAIL Utility

Using a Keypad

8.10 Using a Keypad

All the keys on VT terminal compatible keypads are defined to execute various commands. When you press a keypad key, a PMDF MAIL command is issued. Many of the keys have two functions. For the first functions, you simply press the key. To use the other function, press the PF1 (GOLD) key before pressing the function key. Figure 8-1 shows the keypad functions. For each key shown, the first line gives the key name, the second line the function executed when only that key is pressed, and the third line the function executed when the GOLD (PF1) key is pressed first followed by the key.

Figure 8-1 PMDF MAIL Keypad Definitions

PF1 GOLD	PF2 HELP DIR/FOLDER	PF3 EXTRACT EXTRACT	PF4 ERASE SELECT MAIL
7 SEND SEND/EDIT	8 REPLY REP/EXTRACT	9 FORWARD FOR/EDIT	- READ/NEW SHOW NEW
4 CURRENT CUR/EDIT	5 FIRST FIRST/EDIT	6 LAST LAST/EDIT	' DIR/NEW DIR MAIL
1 BACK BACK/EDIT	2 PRINT PRI/N/NOTIFY	3 DIR DIR/LAST	ENTER ENTER SELECT
0 NEXT NEXT/EDIT		. FILE DELETE	

For example, keypad key `'` is defined as the DIRECTORY/NEW command. When you press `'`, a listing of your new mail messages will be displayed. Keypad key `PF1` is the GOLD key. Pressing `PF1` followed by `'` will issue the DIRECTORY MAIL command.

With the DEFINE and DEFINE/KEY commands, you can bind additional commands to keyboard sequences and keys. So that these definitions will be made each time you invoke PMDF MAIL, you can place them into a MAIL\$INIT file as described in Section 8.11.

8.11 Initialization Files

Commands to be executed upon startup of PMDF MAIL can be placed in a text file with one command per line. The logical MAIL\$INIT should then be defined to point to the file. For instance, if the commands are placed in the file PMDF_INIT:MAIL_INIT.COM, then define MAIL\$INIT as follows:

```
$ DEFINE MAIL$INIT PMDF_INIT:MAIL_INIT.COM
```

So that this logical is defined every time you login, place its definition in your LOGIN.COM command procedure.

Each line in the initialization file will be interpreted as a command and executed. Introduce comments with an exclamation mark. Note that blank lines will be interpreted as either a READ or DIRECTORY command.

A sample initialization file is shown below:

```
$ TYPE PMDF_INIT:MAIL_INIT.COM
DEFINE/KEY F17 "DIRECTORY/LAST NEWMAIL"/TERMINATE
DEFINE/KEY F18 "REPLY/ALL/EDIT/EXTRACT"/TERMINATE
DEFINE/KEY F20 "SET FILE MEMOS", "DIRECTORY/LAST MEMOS"
DEFINE bobr Bob.Roberts@Lonesome.Dove.Org
SHOW VERSION
$ DEFINE MAIL$INIT PMDF_INIT:MAIL_INIT.COM
$ PMDF MAIL
```

```
You have 8 new messages.
```

```
%EMAIL-I-VERSION, PMDF MAIL V5.0-10
EMAIL>
```

8.12 PMDF MAIL and System Management

Several aspects of PMDF MAIL are amenable to system-wide management:

- *System-wide editor default.* PMDF MAIL on OpenVMS VAX uses EDT as the default editor and TPU on OpenVMS Alpha and I64. To tailor system-wide PMDF MAIL's default editor, use the SET EDITOR/SYSTEM DEFAULT command.
- *Controlling which message header lines are displayed.* PMDF MAIL allows users to control which message header lines to display, what order in which to display them, and with what rendition (*e.g.*, bold, underlined, *etc.*). System-wide defaults can also be established through the creation of the file PMDF_MAIL_HEADERS.OPT which should be placed in the PMDF_TABLE: directory. See Section 8.3.3 for details.
- *The PMDF_SYSTEM_FLAGS logical.* The system-wide logical PMDF_SYSTEM_FLAGS translates to a bit-encoded integer value whose bits have the interpretations shown in Table 8-1.

The PMDF MAIL Utility

PMDF MAIL and System Management

Table 8-1 PMDF_SYSTEM_FLAGS Logical

Bit	Value	Usage
0	1	If set then node is treated as being equivalent to the local host and the VMS MAIL FROM:, TO:, or CC: address NODE::USER is translated to the RFC 822 address user@local-host. If clear, then NODE::USER is translated to user%NODE@local-host.
16	65536	If set then captive accounts cannot print to printer queues. This is important in environments where printer queues are used for purposes other than printing.
17	131072	If set then captive accounts cannot print to terminal queues. This is important in environments where terminal queues are used to feed data to non-printing devices (e.g., a terminal queue which actually spools command procedures down a LAT port to some other computer).
18	262144	If set then captive accounts can print to server queues. Only after very careful consideration should this bit ever be set. Picture the following scenario: a captive user creates a command procedure, mails it to him or herself (e.g., SEND/EDIT), then prints it PRINT/NOHEADER to the server queue which will then execute it.
19	524288	If set then captive accounts can print to batch queues. As with bit 18, this bit should only be set after very careful consideration of the consequences.
20	1048576	If set and PMDF MAIL is installed with EXQUOTA privilege, then EXQUOTA privilege will be enabled when composing, extracting, and printing mail messages. Normally, EXQUOTA is only enabled when deleting messages and compressing mail files, and only then when the image is installed with EXQUOTA privilege.

If PMDF_SYSTEM_FLAGS is not defined then it defaults to the value 0 (all bits clear).

In order to install PMDF MAIL with the EXQUOTA privilege, create or edit the file PMDF_COM:SITEIMAGE.DAT and add the following line:

```
PMDF_EXE:UA.EXE /OPEN/HEADER/SHARED/PRIV=(SYSPRV, CMKRNL, SYSLCK, EXQUOTA)
```

8.13 Notable Differences Between PMDF and VMS MAIL

Generally, PMDF MAIL strives to be 100% functionally compatible with VMS MAIL. Many obscure, esoteric features are emulated. There are, however, some notable differences which are discussed below. It is possible, however, that you might notice other differences which might very well be things overlooked by Process.

Commands

The basic command set in PMDF MAIL is compatible with VMS MAIL. Only one command and one qualifier from VMS MAIL are not implemented: the SHOW KEY command, and the /MAIL qualifier of the EXTRACT command. In regards to the /MAIL qualifier, if you need to extract messages to a .MAI file, then use VMS MAIL to do so.

Directory listings

In directory listings of your messages, any IN%" " wrappers will be removed from the displayed From: addresses. PMDF MAIL will also indicate if a message has been moved with the phrase "(moved)" in the directory listing.

The PMDF MAIL Utility

Notable Differences Between PMDF and VMS MAIL

Reading mail

When a message is displayed, you no longer see the VMS MAIL header lines followed by the RFC 822 header lines. All you will see are the RFC 822 header lines. If a message does not have an RFC 822 header in it (*e.g.*, is a message delivered to your mailbox by some mailer other than PMDF), then PMDF MAIL will construct a very basic RFC 822 header from the VMS MAIL header and display that. You can use the SET HEADER_TRIMMING commands to control which header lines are or are not displayed when you read your mail.

Also, when a message is displayed, a slightly different line giving the message number, folder, and date appears at the top of the screen. The difference is fairly minor.

Addressing

Whereas in VMS MAIL you need to specify IN%"*address*", you need only specify *address* in PMDF MAIL. That is, you can omit the IN%" " wrapper from the addresses you specify. For example, to specify the VMS MAIL address IN%"bob@example.com" in PMDF MAIL, just specify bob@example.com.

While @DIS-style mailing lists are supported, only one list name can be specified per address prompt. If you need to specify multiple @DIS filenames, use the /MULTIPLE qualifier to the SEND, FORWARD, REPLY, *etc.* commands. That qualifier will cause multiple To:, Cc:, and Bcc: prompts to be presented until a blank line is entered.

Logical names used as the recipient address are not supported in PMDF MAIL, unless the system manager explicitly enables PMDF, and hence PMDF MAIL, to use logical names as a source of recipient address information with the NAME_TABLE_NAME option described in the *PMDF System Manager's Guide*. Users are strongly encouraged to use the PMDF DB utility to manage their personal "phone books" of addresses.

Editing

When you use the /EDIT qualifier with the ANSWER, FORWARD, MAIL, REPLY, and SEND commands, you will find that the initial header of the message which you are composing also appears in the editor. That is the actual header. You can edit it if you want; your changes will be incorporated into the final message when it is sent. For instance, you might want to add or remove some addresses from the To:, Cc:, or Bcc: header lines, or add some other header lines. PMDF will take the necessary steps to insure that the final message header is legal, correct, and has authenticated originator addresses in it.

To prevent the header from appearing in the editor either invoke PMDF MAIL with the command

```
$ PMDF MAIL/EDIT=NOHEADER
```

or use the /NOHEADER qualifier when issuing commands within PMDF MAIL.

Replying to mail

Both VMS MAIL and PMDF MAIL preferentially use the From: header as the address to send replies to. However, you must keep in mind that VMS MAIL uses the VMS MAIL From: address and PMDF MAIL uses the RFC 822 From: address. These two addresses are not always the same; see Section 2.1.2.

The PMDF MAIL Utility

Notable Differences Between PMDF and VMS MAIL

Automatically purging mail files

PMDF MAIL does not emulate VMS MAIL's behavior of automatically purging any mail file it closes when you have selected AUTO_PURGE. The reason for this is simple: you cannot be closing your own mail file in which case you probably do not want to purge it. PMDF MAIL will only automatically purge your default mail file.

Extracting, forwarding, or replying to multipart messages

When you extract, forward, print, or reply to a multipart message, you should be aware of the following:

- When you extract or print a multipart message, only the last part read is extracted.
- When you forward or reply to a multipart message, then PMDF MAIL starts with the last message part read and works its way up the message nestings until it reaches the message part containing the last part read. (MIME messages can contain messages.) It is then this message part, with any of its subparts, which is forwarded or replied to.

This behavior is intentional. For instance, in the case of forwarding a message the effect is to suppress, somewhat, repeated nestings of the message. User agents which do not do this tend to produce forwarded messages which are nested several levels deep and just plain cumbersome to read.

The /PART, /MESSAGE, and /ENTIRE command qualifiers can be used to override this behavior. Specifically, the /ENTIRE qualifier produces the standard VMS MAIL behavior. With qualifiers to the PMDF MAIL DCL command, these defaults can be controlled.

Note: None of these issues come into play when you are working with an ordinary, single-part mail message.

Output

PMDF MAIL output is directed to SYSS\$ERROR, unlike VMS MAIL output which is directed to SYSS\$OUTPUT. This distinction is not normally evident in interactive usage, but can be relevant if you want to redirect output.

8.14 Command Descriptions

The remainder of this chapter describes the individual PMDF MAIL commands.

PMDF MAIL

Invoke the PMDF MAIL utility.

SYNTAX

PMDF MAIL *[file-spec[,...]] recipient-address[,...]*

Qualifiers	Defaults
<i>/ABORT</i>	See text
<i>/BCC_LIST=addresses</i>	None
<i>/BCC_PROMPT</i>	<i>/NOBCC_PROMPT</i>
<i>/BLOCK</i>	See text
<i>/CAPTIVE</i>	See text
<i>/CC_LIST=addresses</i>	None
<i>/CC_PROMPT</i>	<i>/NOCC_PROMPT</i>
<i>/COMMENTS=comments</i>	None
<i>/CONFIRM=keyword</i>	<i>/CONFIRM=NONE</i>
<i>/EDIT=keyword</i>	<i>/EDIT=NONE</i>
<i>/ENCAPSULATE=keyword</i>	None
<i>/ENCODING=encoding</i>	See text
<i>/ENTIRE=keyword</i>	<i>/PART=ALL</i>
<i>/FILENAME</i>	<i>/NOFILENAME</i>
<i>/FILTER_CTRL</i>	<i>/NOFILTER_CTRL</i>
<i>/FROM=address</i>	None
<i>/IGNORE</i>	See text
<i>/LIST</i>	<i>/NOLIST</i>
<i>/MESSAGE=keyword</i>	<i>/PART=ALL</i>
<i>/MULTIPLE</i>	<i>/SINGLE</i>
<i>/PART=keyword</i>	<i>/PART=ALL</i>
<i>/PERSONAL_NAME=name</i>	None
<i>/PREVALIDATE</i>	<i>/NOPREVALIDATE</i>
<i>/PRIORITY=priority</i>	None
<i>/RECORD</i>	See text
<i>/REMOVE=keyword</i>	<i>/REMOVE=NONE</i>
<i>/REPEATED</i>	<i>/REPEATED</i>
<i>/REPLY_TO=address</i>	None
<i>/SCAN_COMMANDS</i>	<i>/SCAN_COMMANDS</i>
<i>/SELF=keyword</i>	See text
<i>/SENSITIVITY=sensitivity</i>	None
<i>/SIGNATURE=file-spec</i>	See text
<i>/SINGLE</i>	<i>/SINGLE</i>
<i>/SSA</i>	<i>/NOSSA</i>
<i>/SSUBADDRESS=subaddress</i>	None
<i>/SUBADDRESS=subaddress</i>	None
<i>/SUBJECT=subject</i>	None
<i>/TEXT</i>	See text
<i>/TO_LIST=addresses</i>	None
<i>/TO_PROMPT</i>	<i>/NOTO_PROMPT</i>
<i>/TOC</i>	<i>/TOC</i>
<i>/TRIM=keywords</i>	<i>/TRIM=READ</i>

PMDF MAIL commands

PMDF MAIL

/USER=username

See text

PARAMETERS

file-spec[,...]

Optional list of one or more files to send as the message. If this parameter is specified then one or more recipient addresses must also be specified.

recipient-address[,...]

Optional list of one or more addresses to send the message to. This parameter must be specified when the optional file-spec parameter is specified. Each address typically needs to be quoted with double quotes.

DESCRIPTION

The PMDF MAIL command invokes the PMDF MAIL utility which may be used to send network mail messages to other users and to read and manage mail messages sent to you.

PMDF MAIL is an extended version of VMS MAIL. The extensions provide support for Internet style messaging and includes support for sending and reading MIME messages. MIME allows, among other things, for multipart messages which may contain file attachments, binary data, images, audio, and video.

QUALIFIERS

/ABORT

By default, if an error occurs while processing an input message file or recipient address, PMDF SEND will ask the user whether or not to send the message anyhow. If the */ABORT* qualifier is specified, then PMDF SEND will merely exit (with an error) when a problem occurs during file or address processing.

The */ABORT* and */IGNORE* qualifiers are mutually exclusive — only one or the other may be used.

The */ABORT* qualifier has no effect on interactive PMDF MAIL sessions.

/BCC_LIST=address[,...]

/CC_LIST=address[,...]

/TO_LIST=address[,...]

Specify one or more To:, Cc:, or Bcc: recipient addresses. When specifying more than one addressee of a given type (To:, Cc:, or Bcc:), enclose the addresses in parentheses as in

/TO_LIST=("sue@example.com","bob@example.com")

The */BCC_LIST*, */CC_LIST*, and */TO_LIST* qualifiers have no effect on interactive PMDF MAIL sessions.

/BCC_PROMPT

/CC_PROMPT

/TO_PROMPT

Request to be prompted for To:, Cc:, or Bcc: recipient addresses. By default you are only prompted once for each selected type (To:, Cc:, or Bcc:). If /MULTIPLE has also been specified, then for each selected type you will be prompted repeatedly until a blank line is entered.

The /BCC_PROMPT, /CC_PROMPT, and /TO_PROMPT qualifiers have no effect on interactive PMDF MAIL sessions.

/CAPTIVE

When /CAPTIVE is specified, PMDF MAIL will treat the user as though they were a captive user and not allow them to perform operations such as spawning.

/COMMENTS=comments

This qualifier may be used to specify the contents of the Comments: header line. If this qualifier is not specified and the PMDF_COMMENTS logical is not defined, then no Comments: header line will be generated.

The /COMMENTS qualifier has no effect on interactive PMDF MAIL sessions.

/BLOCK

/RECORD

/TEXT

Specify the file access mode to use when processing the files to send. The default depends upon the file extension.

The /BLOCK, /RECORD, and /TEXT qualifiers have no effect on interactive PMDF MAIL sessions.

/CONFIRM[=keyword[,...]]

Specifies for interactive PMDF MAIL sessions, which operations should be confirmed prior to actually taking. By default, /CONFIRM=NONE is assumed. The accepted keyword values are

ADDRESS

Confirm each recipient address.

ALL

Confirm all actions when sending, extracting, forwarding, or replying to messages.

DIGEST

Confirm each digest element when creating a message digest.

EXTRACT

Confirm when extracting a message.

FORWARD

Confirm when forwarding a message.

NONE

Never request confirmation except when the /CONFIRM qualifier is used with an interactive command.

PMDF MAIL commands

PMDF MAIL

PRINT

Confirm when printing a message.

REPLY

Confirm when replying to a message.

RESEND

Confirm when resending a message.

SEND

Confirm when sending a message.

If /CONFIRM is specified without any keyword values, then /CONFIRM=ALL is assumed.

/ENCODING=encoding

Specify the encoding method to use to encode an input message file. Typically, no encoding is used; however, this depends upon the file type as determined from the file extension. The available encoding methods are 7BIT, 8BIT, BASE32, BASE64, BINHEX, BTOA, COMPRESSED-BASE64, BASE85, HEXADECIMAL, PATHWORKS, QUOTED_PRINTABLE, UUENCODE, and COMPRESSED-UUENCODE.

/EDIT[=keyword[,...]]

Specifies for interactive PMDF MAIL sessions, which commands implicitly invoke the editor. The accepted keyword values are

ALL

Always invoke the editor in conjunction with all commands that accept the /EDIT qualifier.

COMMAND_LINE

In conjunction with /EDIT=SEND, invoke the editor even when sending a file or message from the DCL command line.

DIRECTORY

Always invoke the editor to display DIRECTORY and DIRECTORY/FOLDER listings.

FORWARD

Always invoke the editor to edit messages being forwarded with the FORWARD command.

HEADER

NOHEADER

By default the message's header is always displayed in the editor. To inhibit this, specify /EDIT=NOHEADER.

KEPT[=editor-process-name]

Initially invoke the editor as a subprocess; re-attach to the subprocess for subsequent editor operations.

NONE

Never invoke the editor unless explicitly requested to do so with the /EDIT qualifier.

READ

Always invoke the editor to display messages being read with the READ, CURRENT, BACK, NEXT, FIRST, and LAST commands.

REPLY[=EXTRACT[=quote]]

Always invoke the editor to edit messages being replied to with the ANSWER or REPLY commands. If the optional EXTRACT keyword is specified, then the content of the message being replied to will be included in the reply. To specify a text string to use to quote each line of the extracted message text, specify a value for the EXTRACT keyword. For instance, to quote each line with the two characters "> ", invoke PMDF MAIL with the command

```
$ PMDF MAIL/EDIT=REPLY=EXTRACT="> "
```

SEND

Always invoke the editor to compose messages being sent with the MAIL or SEND commands.

If /EDIT is specified without any keyword values, then /EDIT=(SEND,REPLY) is assumed.

/ENCAPSULATE[=keyword[,...]]

/NOENCAPSULATE[=keyword[,...]]

For interactive PMDF MAIL sessions, specifies file encapsulation defaults for the FORWARD, SEND, and REPLY commands as well as the synonymous commands MAIL and ANSWER. The accepted keyword values are FORWARD, SEND, REPLY, ALL, and NONE.

The /ENCAPSULATE qualifier specifies which commands should by default encapsulate files as separate attachments; the /NOENCAPSULATE qualifier specifies which commands should not by default encapsulate files as separate message attachments. Specifying /ENCAPSULATE without any qualifiers implies /ENCAPSULATE=ALL, and specifying /NOENCAPSULATE without any qualifiers implies /ENCAPSULATE=NONE.

/ENTIRE[=keyword[,...]]

/MESSAGE[=keyword[,...]]

/PART[=keyword[,...]]

For interactive PMDF MAIL sessions, specifies message content scope for EXTRACT, FORWARD, PRINT, and REPLY commands. The accepted keyword values are EXTRACT, FORWARD, PRINT, REPLY, ALL, and NONE.

The /ENTIRE qualifier specifies which commands by default act upon the entire message. The /MESSAGE qualifier specifies which commands by default act upon only the current portion of the message which constitutes an entire message. (Note that a message may contain one or more messages as subparts.) The /PART qualifier specifies which commands by default act upon only the current message body part.

Specifying /ENTIRE without any qualifiers implies /ENTIRE=ALL; specifying /MESSAGE without any qualifiers implies /MESSAGE=ALL; and specifying /PART without any qualifiers implies /PART=ALL.

PMDF MAIL commands

PMDF MAIL

/FILENAME

/NOFILENAME (default)

The */FILENAME* qualifier specifies that the original file name should be included in the message headers.

/FILTER_CTRL

/NOFILTER_CTRL (default)

For interactive PMDF MAIL sessions, specifying */FILTER_CTRL* turns on the filtering out of 7-bit and 8-bit control characters in messages. Messages which contain such control characters can cause problems with the terminal when they are displayed. When */FILTER_CTRL* is specified, such a character is displayed as its hexadecimal value in the format “=XX”.

/FROM=address

This qualifier may be used to specify the contents of the From: header line. If this qualifier is not specified and the *PMDF_FROM* logical is not defined, then a From: header line will be constructed from the username of the user invoking PMDF MAIL and the local host name. Note that even if a From: address is provided, the invoking user's address will appear in a Sender: header line.

The */FROM* qualifier has no effect on interactive PMDF MAIL sessions.

/IGNORE

By default, if an error occurs while processing an input message file or recipient address, PMDF MAIL will ask the user whether or not to send the message anyhow. If the */IGNORE* qualifier is specified, then PMDF MAIL will not ask the user whether or not to send the message—it will send the good input files to the good recipient addresses.

The */ABORT* and */IGNORE* qualifiers are mutually exclusive — only one or the other may be used.

The */IGNORE* qualifier has no effect on interactive PMDF MAIL sessions.

/LIST (default)

/NOLIST

When specified, */NOLIST* becomes the default for the *ANSWER* and *REPLY* commands.

/MESSAGE (default)

See */ENTIRE*.

/MULTIPLE

/SINGLE (default)

Normally, only a single prompt is made for each type of address selected with the */TO_PROMPT*, */CC_PROMPT*, and */BCC_PROMPT* qualifiers. When */MULTIPLE* is specified, these prompts will be repeated for each selected address type until a blank line is entered.

The */MULTIPLE* and */SINGLE* qualifiers have no effect on interactive PMDF MAIL sessions.

/PART

See */ENTIRE*.

/PERSONAL_NAME=name
/NOPERSONAL_NAME

Specify a personal name field to use in conjunction with your return address. Any value specified will override your SET PERSONAL_NAME profile setting. If /NOPERSONAL_NAME is specified, then no personal name field will appear in the return address.

The /PERSONAL_NAME qualifier has no effect on interactive PMDF MAIL sessions.

/PREVALIDATE
/NOPREVALIDATE (default)

Prevalidate recipient addresses prior to invoking the editor to compose a message. If any illegal addresses are detected, PMDF MAIL will ask whether to cancel the operation or to proceed anyway. If told to proceed, both the good and bad addresses will appear in the editor where they may be modified as necessary. Validation will, of course, still be performed after the editor is exited.

/PRIORITY=priority

This qualifier may be used to specify the contents of the Priority: header line. If this qualifier is not specified, then no Priority: header line will be generated.

The /PRIORITY qualifier has no effect on interactive PMDF MAIL sessions.

/REMOVE[=keyword[,...]]
/NOREMOVE[=keyword[,...]]

For interactive PMDF MAIL sessions, specifies /REMOVE or /NOREMOVE defaults for the FORWARD, REPLY, RESEND, and SEND commands. The accepted keyword values are FORWARD, REPLY, RESEND, SEND, ALL, and NONE.

The /REMOVE qualifier specifies which commands by default assume /REMOVE. The /NOREMOVE qualifier specifies which commands by default assume /NOREMOVE. Specifying /REMOVE without any qualifiers implies /REMOVE=ALL while specifying /NOREMOVE without any qualifiers implies /NOREMOVE=ALL.

/REPEATED (default)
/NOREPEATED

Specify /REPEATED to imply /REPEATED for all REPLY/ALL commands; specify /NOREPEATED to imply /NOREPEATED for all REPLY/ALL commands.

/REPLY_TO=address

This qualifier may be used to specify the contents of the Reply-to: header line. If this qualifier is not specified and the PMDF_REPLY_TO logical is not defined, then no Reply-to: header line will be generated.

The /REPLY_TO qualifier has no effect on interactive PMDF MAIL sessions.

/SCAN_COMMANDS (default)
/NOSCAN_COMMANDS

By default, the command line is scanned for errors as it is entered and errors are signalled immediately. Specify /NOSCAN_COMMANDS to have errors only signalled after the entire command has been entered and the RETURN key pressed.

PMDF MAIL commands

PMDF MAIL

/SELF[=keyword[,...]]

/NOSELF[=keyword[,...]]

For interactive PMDF MAIL sessions, specifies for which types of message sending operations you will automatically receive copies of messages you originate. The accepted keyword values are FORWARD, REPLY, RESEND, SEND, ALL, and NONE.

The /SELF qualifier specifies for which types of operations you will receive a copy of messages sent. The /NOSELF qualifier specifies for which operation types you will not receive a message copy. Specifying /SELF without any qualifiers implies /SELF=ALL while specifying /NOSELF without any qualifiers implies /NOSELF=ALL.

Any settings made with the /SELF and /NOSELF qualifiers will be overridden by any positive SET COPY_SELF profile settings.

/SENSITIVITY=sensitivity

This qualifier may be used to specify the contents of the Sensitivity: header line. If this qualifier is not specified and the PMDF_SENSITIVITY logical is not defined, then no Sensitivity: header line will be generated.

The /SENSITIVITY qualifier has no effect on interactive PMDF MAIL sessions.

/SIGNATURE=signature-line

/SIGNATURE="@file-spec"

/NOSIGNATURE

Specify a signature line or file to append to the end of the message being sent. If /NOSIGNATURE is specified, then no signature will be appended.

The /SIGNATURE qualifier has no effect on interactive PMDF MAIL sessions.

/SSA

/NOSSA (default)

Show aliases in the system alias database as well as in your personal alias database. Non-privileged users will have read-only access to the system alias database.

/SSUBADDRESS=subaddress

Specify a subaddress to attach to your address in message copies sent to you via the COPY_SELF mechanism.

/SUBADDRESS=subaddress

Specify a subaddress to attach to the envelope From: address; *e.g.*, if the envelope From: address is prospero@example.com then specifying /SUBADDRESS="Postmaster" would result in the envelope From: address prospero+Postmaster@example.com.

The /SUBADDRESS qualifier has no effect on interactive PMDF MAIL sessions.

/SUBJECT=subject

Specify the contents of the Subject: header line. If this qualifier is not specified, then no Subject: header line will be generated. If it is specified, but no value given, then the user will be prompted for a value.

The /SUBJECT qualifier has no effect on interactive PMDF MAIL sessions.

/TOC (default)

/NOTOC

Show a table of contents for each displayed multipart message. The table of contents is not actually part of the message.

/TRIM[=keyword[,...]]

/NOTRIM[=keyword[,...]]

For interactive PMDF MAIL sessions, specifies for which operations header lines will automatically be trimmed or left intact. The accepted keyword values are EXTRACT, FORWARD, PRINT, REPLY, RESEND, SEND, ALL, and NONE.

The */TRIM* qualifier specifies which commands by default assume */TRIM*; the */NOTRIM* qualifier specifies which commands by default assume */NOTRIM*. Specifying */TRIM* without any qualifiers implies */TRIM=ALL* while specifying */NOTRIM* without any qualifiers implies */NOTRIM=ALL*.

/USER=username

Specify the local username to use in the message sender's address (this will be the From: address if no other From: address is given and the Sender: address otherwise. You must either have WORLD privilege or hold the PMDF_WORLD or PMDF_WORLD_username rightslist identifier in order to use this qualifier and specify a username other than your own. The special case of a blank string will not insert any Sender: information.

The */USER* qualifier has no effect on interactive PMDF MAIL sessions.

EXAMPLES

1 \$ PMDF MAIL
...
EMAIL> EXIT

This example shows how to invoke the PMDF MAIL utility and then subsequently exit the utility with the EXIT command.

2 \$ PMDF MAIL/SUBJECT="Meeting" MINUTES.TXT
"sue@example.com", "bob@example.com"
\$

In this example the contents of the file MINUTES.TXT is sent to sue@example.com and bob@example.com.

ALIAS ADD

Add an alias to an alias database.

SYNTAX

ALIAS ADD *alias-name* [*alias-value*]

Qualifiers	Defaults
<i>/BLOCK_RECEIPTS</i>	<i>/BLOCK_RECEIPTS</i>
<i>/EDIT</i>	<i>None</i>
<i>/EXPAND</i>	<i>/NOEXPAND</i>
<i>/FAX_ADDRESS</i>	<i>/NOFAX_ADDRESS</i>
<i>/LIST</i>	<i>None</i>
<i>/LOG</i>	<i>/NOLOG</i>
<i>/MAIL_ADDRESS</i>	<i>/MAIL_ADDRESS</i>
<i>/NOWILD</i>	<i>None</i>
<i>/PASS_RECEIPTS</i>	<i>/BLOCK_RECEIPTS</i>
<i>/PRIVATE</i>	<i>/PRIVATE</i>
<i>/PUBLIC</i>	<i>/PRIVATE</i>

PARAMETERS

alias-name

Name of the alias to add. Alias name may not contain wild cards.

alias-value

Translation value of the alias. This parameter may only be omitted when */EDIT* or */LIST* is specified.

DESCRIPTION

The ALIAS ADD command will add an alias with the specified name and translation value to the currently open alias database. If no database is open, then your personal alias database will be opened and the alias added to it.

If an alias with the same name already exists, then an error will be signalled and no change made to the database. Use the ALIAS MODIFY command to change the translation value of an existing alias; the ALIAS DELETE command may be used to remove existing aliases from the database.

When */LIST* is specified and a mailing list reference is given for ***alias-value***, the editor will be invoked to compose or modify the mailing list file. If the ***alias-value*** parameter is omitted, then the mailing list file name will be derived from the alias name:

device: [*directory*] ***alias-name***.DIS

where *device* and *directory* are your login device and directory.

When /EDIT is specified, the editor will be invoked to compose the alias translation value, **alias-value**.

QUALIFIERS

/BLOCK_RECEIPTS (default)

/NOBLOCK_RECEIPTS

/BLOCK_RECEIPTS disables the passage of requests for delivery and read receipts through to recipients as the alias is expanded. Requests for such receipts are honored at the time the alias expands; in effect the alias is treated as the message destination.

The */BLOCK_RECEIPTS* and */NOPASS_RECEIPTS* qualifiers are synonyms; likewise for the */NOBLOCK_RECEIPTS* and */PASS_RECEIPTS* qualifiers.

/EDIT

Invoke the editor to compose the alias translation value.

/EXPAND

/NOEXPAND (default)

/NOEXPAND inhibits the expansion of the alias into its component addresses; */EXPAND* permits the alias to be replaced with its translation value in the message header. See the description of the */PUBLIC* and */PRIVATE* attributes for details on the possible appearance of the alias in the message header.

/FAX_ADDRESS

/NOFAX_ADDRESS (default)

Mark the alias translation value as being a PMDF-FAX address.

/LIST

Invoke the editor to compose a mailing list distribution file.

/LOG

/NOLOG (default)

Display a status message reporting the addition of the new alias.

/MAIL_ADDRESS (default)

/NOMAIL_ADDRESS

Mark the alias translation value as being an e-mail address.

/PASS_RECEIPTS

/NOPASS_RECEIPTS (default)

/PASS_RECEIPTS enables the passage of requests for delivery and read receipts through to all recipients as the alias is expanded. Note that allowing the passage of such a request to a large distribution list may result in a lot of return mail. **Consequently, receipts should never be allowed to pass through to distribution lists.**

The */PASS_RECEIPTS* and */NOBLOCK_RECEIPTS* qualifiers are synonyms; likewise for the */NOPASS_RECEIPTS* and */BLOCK_RECEIPTS* qualifiers.

PMDf MAIL commands

ALIAS ADD

/PRIVATE (default)

/NOPRIVATE

Mark the alias as being private. Other users will not be able to use the alias. If the alias appears in outgoing mail (and is not expanded into its component addresses) it will appear as an unexpanded RFC 822 group address: *alias: ;*.

When the alias is marked */EXPAND*, the */PRIVATE* and */NOPRIVATE* qualifiers have no effect.

The */PRIVATE* and */NOPUBLIC* qualifiers are synonyms; likewise for the */NOPRIVATE* and */PUBLIC* qualifiers.

/PUBLIC

/NOPUBLIC (default)

Mark the alias as being publicly accessible. Other users may reference the alias by sending mail to an address of the form *user+alias@local-host*. When the alias is used in outgoing mail and is not expanded into component addresses (*/NOEXPAND*), it will appear in the message in the form *user+alias@local-host*.

When the alias is marked */EXPAND*, the */PUBLIC* and */NOPUBLIC* qualifiers have no effect.

The */PUBLIC* and */NOPRIVATE* qualifiers are synonyms; likewise for the */NOPUBLIC* and */PRIVATE* qualifiers.

/NOWILD

Treat the wild card characters *** and *%* as being literal asterisks and percent signs. If the alias name contains either of these two characters and */NOWILD* is not specified, then an error will be signalled and no entry in the database made.

EXAMPLES

In the following example the alias “mro” is created for the address `mrochek@example.com`. After establishing this alias, mail addressed to mro will be sent to `mrochek@example.com`.

```
EMAIL> ALIAS ADD MRO MROCHEK@EXAMPLE.COM
%EMAIL-E-NODBOPEN, no database file open
%EMAIL-S-CREATED, D1: [BECKETT]ALIASES.DAT;1 created
EMAIL> ALIAS SHOW
Alias                               Value
-----
mro                                 mrochek@example.com
EMAIL> SEND
To: MRO
Subject: You're in the dog house now!
Enter your message below. Press CTRL/Z when complete, or CTRL/C to quit:
Mrochek,
...
CTRL/Z
EMAIL>
```

In the above example, note that although the alias name and value were entered in uppercase characters, they were stored in lowercase. If the case of the translation

PMDF MAIL commands

ALIAS ADD

value, here mrochek@example.com, is important then quote the translation value when entering it:

```
EMAIL> ALIAS ADD SUE "Sue@VAXA.Eng.Example.CT.US"
EMAIL> ALIAS SHOW
Alias                                     Value
-----
mro                                       mrochek@example.com
sue                                       Sue@VAXA.Eng.Example.CT.US
EMAIL>
```

ALIAS CLOSE

Close the currently open alias database.

SYNTAX

ALIAS CLOSE

Command Qualifiers	Defaults
---------------------------	-----------------

None.

None.

PARAMETERS

None.

DESCRIPTION

Close the currently open alias database.

ALIAS COPY

Copy an existing alias.

SYNTAX **ALIAS COPY** *alias-name new-alias-name*

Qualifiers	Defaults
<i>/CONFIRM</i>	<i>/NOCONFIRM</i>
<i>/LOG</i>	<i>/NOLOG</i>
<i>/NOWILD</i>	<i>None</i>

PARAMETERS

alias-name

Name of the alias to copy. Alias name may not contain wild cards.

new-alias-name

Name of the new alias to create. Alias name may not contain wild cards.

DESCRIPTION

Make a copy of an existing alias. The new alias will have the same translation value as the existing alias. The currently open alias database will be used. If no database is open, then your personal alias database is first opened.

QUALIFIERS

/CONFIRM

/NOCONFIRM (default)

When */CONFIRM* is specified, you will be prompted to confirm the duplication of the alias.

/LOG

/NOLOG (default)

Report the number, zero or one, of aliases copied.

/NOWILD

Treat the wild card characters * and % as being literal asterisks and percent signs. If the alias names contains either of these two characters and */NOWILD* is not specified, then an error will be signalled and no entry in the database made.

ALIAS DELETE

Delete one or more aliases.

SYNTAX

ALIAS DELETE *alias-name*

Qualifiers

/CONFIRM

/LOG

/NOWILD

Defaults

/NOCONFIRM

/NOLOG

None

PARAMETERS

alias-name

Name of the alias to delete. Alias name may contain wild cards.

DESCRIPTION

Remove the specified alias from the currently open alias database. If no database is open, then your personal alias database is first opened. If the alias name contains wild cards, * and %, then all aliases whose name match the specified alias name will be removed. To suppress the interpretation of wild cards, use the */NOWILD* qualifier.

QUALIFIERS

/CONFIRM

/NOCONFIRM (default)

When */CONFIRM* is specified, you will be prompted to confirm the deletion of each alias.

/LOG

/NOLOG (default)

Report the number of aliases deleted.

/NOWILD

Treat the wild card characters * and % as being literal asterisks and percent signs in the alias name.

ALIAS MODIFY

Add an alias to an alias database.

SYNTAX

ALIAS MODIFY *alias-name* [*alias-value*]

Qualifiers	Defaults
<i>/BLOCK_RECEIPTS</i>	<i>/BLOCK_RECEIPTS</i>
<i>/EDIT</i>	<i>None</i>
<i>/EXPAND</i>	<i>/NOEXPAND</i>
<i>/FAX_ADDRESS</i>	<i>/NOFAX_ADDRESS</i>
<i>/LIST</i>	<i>None</i>
<i>/LOG</i>	<i>/NOLOG</i>
<i>/MAIL_ADDRESS</i>	<i>/MAIL_ADDRESS</i>
<i>/NOWILD</i>	<i>None</i>
<i>/PASS_RECEIPTS</i>	<i>/BLOCK_RECEIPTS</i>
<i>/PRIVATE</i>	<i>/PRIVATE</i>
<i>/PUBLIC</i>	<i>/PRIVATE</i>

PARAMETERS

alias-name

Name of the alias to modify. Alias name may not contain wild cards.

alias-value

New translation value for the alias. This parameter may only be omitted when */EDIT* or */LIST* is specified.

DESCRIPTION

The ALIAS MODIFY command changes the translation value of an existing alias in the currently open alias database. If no database is open, then your personal alias database will be opened and the alias added to it.

When */LIST* is specified and the alias specifies to a mailing list distribution file, the editor will be invoked to modify the distribution file.

When */EDIT* is specified, the editor will be invoked to edit the alias translation value.

PMDF MAIL commands

ALIAS MODIFY

QUALIFIERS

/BLOCK_RECEIPTS (default)

/NOBLOCK_RECEIPTS

/BLOCK_RECEIPTS disables the passage of requests for delivery and read receipts through to recipients as the alias is expanded. Requests for such receipts are honored at the time the alias expands; in effect the alias is treated as the message destination.

The */BLOCK_RECEIPTS* and */NOPASS_RECEIPTS* qualifiers are synonyms; likewise for the */NOBLOCK_RECEIPTS* and */PASS_RECEIPTS* qualifiers.

/EDIT

Invoke the editor to edit the alias translation value.

/EXPAND

/NOEXPAND (default)

/NOEXPAND inhibits the expansion of the alias into its component addresses; */EXPAND* permits the alias to be replaced with its translation value in the message header. See the description of the */PUBLIC* and */PRIVATE* attributes for details on the possible appearance of the alias in the message header.

/FAX_ADDRESS

/NOFAX_ADDRESS (default)

Mark the alias translation value as being a PMDF-FAX address.

/LIST

Invoke the editor to edit a mailing list distribution file.

/LOG

/NOLOG (default)

Display a status message reporting the modification the alias.

/MAIL_ADDRESS (default)

/NOMAIL_ADDRESS

Mark the alias translation value as being an e-mail address.

/PASS_RECEIPTS

/NOPASS_RECEIPTS (default)

/PASS_RECEIPTS enables the passage of requests for delivery and read receipts through to all recipients as the alias is expanded. Note that allowing the passage of such a request to a large distribution list may result in a lot of return mail. **Consequently, receipts should never be allowed to pass through to distribution lists.**

The */PASS_RECEIPTS* and */NOBLOCK_RECEIPTS* qualifiers are synonyms; likewise for the */NOPASS_RECEIPTS* and */BLOCK_RECEIPTS* qualifiers.

/PRIVATE (default)

/NOPRIVATE

Mark the alias as being private. Other users will not be able to use this alias. If this alias appears in outgoing mail (and is not expanded into its component addresses) it will appear as an unexpanded RFC 822 group address: *alias: ;*

When the alias is marked */EXPAND*, the */PRIVATE* and */NOPRIVATE* qualifiers have no effect.

The */PRIVATE* and */NOPUBLIC* qualifiers are synonyms; likewise for the */NOPRIVATE* and */PUBLIC* qualifiers.

/PUBLIC

/NOPUBLIC (default)

Mark the alias as being publicly accessible. Other users may reference the alias by sending mail to an address of the form *user+alias@local-host*. When the alias is used in outgoing mail and is not expanded into component addresses (*/NOEXPAND*), it will appear in the message in the form *user+alias@local-host*.

When the alias is marked */EXPAND*, the */PUBLIC* and */NOPUBLIC* qualifiers have no effect.

The */PUBLIC* and */NOPRIVATE* qualifiers are synonyms; likewise for the */NOPUBLIC* and */PRIVATE* qualifiers.

/NOWILD

Treat the wild card characters *** and *%* as being literal asterisks and percent signs. If the alias name contains either of these two characters and */NOWILD* is not specified, then an error will be signalled and no entry in the database made.

ALIAS OPEN

Open the specified alias database.

SYNTAX **ALIAS OPEN** *alias-database-spec*

Qualifiers	Defaults
<i>/LONG</i>	<i>/LONG</i>
<i>/SHORT</i>	<i>/LONG</i>

PARAMETERS

alias-database-spec
File specification of the database to open.

DESCRIPTION

Open the specified alias database file. If another database is already open, it will first be closed. If the specified database file does not exist, then it will be created. The */SHORT* and */LONG* qualifiers control whether or not a “long” or “short” database is created. If neither qualifiers is specified, then a long database is created. Long databases allow alias name/translation value lengths of 80/132 characters; short databases allow lengths of 32/80 characters.

QUALIFIERS

/LONG (default)

If the specified database does not exist, then create it as a long database allowing for alias name lengths of up to 80 characters and alias translation values of lengths up to 132 characters.

/SHORT

If the specified database does not exist, then create it as a short database allowing for alias name lengths of up to 32 characters and alias translation values of lengths up to 80 characters.

ALIAS OVERRIDE

Enable non-mail-address entry manipulation.

SYNTAX

ALIAS OVERRIDE ON ALIAS OVERRIDE OFF

Command Qualifiers	Defaults
--------------------	----------

None.

None.

PARAMETERS

None.

DESCRIPTION

The ALIAS OVERRIDE command is useful when looking at or modifying databases other than a personal alias database. Ordinarily the database manipulation commands will only operate on aliases marked as mail addresses. When the command ALIAS OVERRIDE ON has been issued, these commands may be used to manipulate any entry in the database regardless of whether or not it has been flagged as a mail address.

Note that when an alias is added with the ALIAS ADD command, it is marked as being a mail address unless the /NOMAIL_ADDRESS qualifier was used.

The ALIAS OVERRIDE OFF command negates the ALIAS OVERRIDE ON command.

ALIAS REMOVE

Delete one or more aliases.

SYNTAX **ALIAS REMOVE** *alias-name*

PARAMETERS

alias-name

Name of the alias to delete. Alias name may contain wild cards.

DESCRIPTION

The ALIAS REMOVE command is identical to the ALIAS DELETE command. For information on the use the ALIAS REMOVE command, see the description of the ALIAS DELETE command.

ALIAS RENAME

Change the name of an alias.

SYNTAX **ALIAS RENAME** *old-alias-name new-alias-name*

Qualifiers	Defaults
<i>/CONFIRM</i>	<i>/NOCONFIRM</i>
<i>/LOG</i>	<i>/NOLOG</i>
<i>/NOWILD</i>	<i>None</i>

PARAMETERS

old-alias-name

Name of the alias to rename. Alias name may not contain wild cards.

new-alias-name

New name to give to the alias. Alias name may not contain wild cards.

DESCRIPTION

The ALIAS RENAME command is used to rename an alias without altering its translation value. The currently open alias database will be used. If no database is open, then your personal alias database is opened and used.

QUALIFIERS

/CONFIRM

/NOCONFIRM (default)

When */CONFIRM* is specified, you will be prompted to confirm the rename operation before it is actually performed.

/LOG

/NOLOG (default)

Report the number, zero or one, of aliases renamed.

/NOWILD

Treat the wild card characters * and % as being literal asterisks and percent signs. If the alias names contains either of these two characters and */NOWILD* is not specified, then an error will be signalled and no entry in the database made.

ALIAS SET

Change the characteristics of an alias.

SYNTAX **ALIAS SET** *alias-name*

Qualifiers	Defaults
<i>/BLOCK_RECEIPTS</i>	<i>/BLOCK_RECEIPTS</i>
<i>/CONFIRM</i>	<i>/NOCONFIRM</i>
<i>/EXPAND</i>	<i>/NOEXPAND</i>
<i>/FAX_ADDRESS</i>	<i>/NOFAX_ADDRESS</i>
<i>/LOG</i>	<i>/NOLOG</i>
<i>/MAIL_ADDRESS</i>	<i>/MAIL_ADDRESS</i>
<i>/NOWILD</i>	<i>None</i>
<i>/PASS_RECEIPTS</i>	<i>/BLOCK_RECEIPTS</i>
<i>/PRIVATE</i>	<i>/PRIVATE</i>
<i>/PUBLIC</i>	<i>/PRIVATE</i>

PARAMETERS

alias-name

Name of the alias for which to affect settings. Wild cards are permitted in the alias name.

DESCRIPTION

The ALIAS SET command allows the characteristics of one or more aliases to be changed. For instance, to mark as public all of your aliases whose names end with *-list*, use the command

```
EMAIL> ALIAS SET/PUBLIC *-LIST
```

The settings will be made to aliases in the currently open alias database. If no database is open, then your personal alias database will first be opened.

When an alias with an associated mailing list distribution file is marked */PUBLIC* or */NOPRIVATE*, the distribution file will have its protection mask modified to be world readable.

QUALIFIERS

/BLOCK_RECEIPTS (default)

/NOBLOCK_RECEIPTS

/BLOCK_RECEIPTS disables the passage of requests for delivery and read receipts through to recipients as the alias is expanded. Requests for such receipts are honored at the time the alias expands; in effect the alias is treated as the message destination.

The */BLOCK_RECEIPTS* and */NOPASS_RECEIPTS* qualifiers are synonyms; likewise for the */NOBLOCK_RECEIPTS* and */PASS_RECEIPTS* qualifiers.

/CONFIRM

/NOCONFIRM (default)

When */CONFIRM* is specified, you will be prompted to confirm the modification of each alias.

/EXPAND

/NOEXPAND (default)

/NOEXPAND inhibits the expansion of the alias into its component addresses; */EXPAND* permits the alias to be replaced with its translation value in the message header. See the description of the */PUBLIC* and */PRIVATE* attributes for details on the possible appearance of the alias in the message header.

/FAX_ADDRESS

/NOFAX_ADDRESS (default)

Mark the alias translation value as being a PMDF-FAX address.

/LOG

/NOLOG (default)

Report the number of aliases modified.

/MAIL_ADDRESS (default)

/NOMAIL_ADDRESS

Mark the alias translation value as being an e-mail address.

/PASS_RECEIPTS

/NOPASS_RECEIPTS (default)

/PASS_RECEIPTS enables the passage of requests for delivery and read receipts through to all recipients as the alias is expanded. Note that allowing the passage of such a request to a large distribution list may result in a lot of return mail. **Consequently, receipts should never be allowed to pass through to distribution lists.**

The */PASS_RECEIPTS* and */NOBLOCK_RECEIPTS* qualifiers are synonyms; likewise for the */NOPASS_RECEIPTS* and */BLOCK_RECEIPTS* qualifiers.

/PRIVATE (default)

/NOPRIVATE

Mark the alias as being private. Other users will not be able to use the alias. If the alias appears in outgoing mail (and is not expanded into its component addresses)

PMDf MAIL commands

ALIAS SET

it will appear as an unexpanded RFC 822 group address: *alias: ;*

When the alias is marked /EXPAND, the /PRIVATE and /NOPRIVATE qualifiers have no effect.

The /PRIVATE and /NOPUBLIC qualifiers are synonyms; likewise for the /NOPRIVATE and /PUBLIC qualifiers.

/PUBLIC

/NOPUBLIC (default)

Mark the alias as being publicly accessible. Other users may reference the alias by sending mail to an address of the form *user+alias@local-host*. When the alias is used in outgoing mail and is not expanded into component addresses (/NOEXPAND), it will appear in the message in the form *user+alias@local-host*.

When the alias is marked /EXPAND, the /PUBLIC and /NOPUBLIC qualifiers have no effect.

The /PUBLIC and /NOPRIVATE qualifiers are synonyms; likewise for the /NOPUBLIC and /PRIVATE qualifiers.

/NOWILD

Treat the wild card characters * and % as being literal asterisks and percent signs. If the alias name contains either of these two characters and /NOWILD is not specified, then an error will be signalled and no entry in the database made.

EXAMPLES

In the following example all aliases whose name ends with “-LIST” are marked as public, non-expandable, and with receipts blocked:

```
EMAIL> ALIAS SET/PUBLIC/NOEXPAND/BLOCK_RECEIPTS *-LIST
%EMAIL-I-DBMATCHES, 11 matching entries modified
EMAIL>
```

ALIAS SHOW

List aliases from an alias database.

SYNTAX

ALIAS SHOW [*alias-name*]

Qualifiers	Defaults
<i>/ATTRIBUTES</i>	<i>None</i>
<i>/LIST</i>	<i>None</i>
<i>/NOWILD</i>	<i>None</i>

PARAMETERS

alias-name

Optional parameter specifying the name of the alias to show. Alias name may contain wild cards.

DESCRIPTION

Use the ALIAS SHOW command to list one or more aliases in an alias database. Aliases from the currently open alias database will be shown. If no alias database is open, then your personal alias database is first opened.

When the optional alias name parameter is omitted, all aliases from the database are listed. Use the */ATTRIBUTES* qualifier to show the characteristics associated with each alias (*e.g.*, public, private, expand, no expand, *etc.*). To also show the contents of any mailing lists associated with the displayed aliases, specify */LIST*.

QUALIFIERS

/ATTRIBUTES

Show characteristics of each displayed alias.

/LIST

Show the contents of any mailing lists (*i.e.*, distribution lists) associated with the displayed aliases.

/NOWILD

Treat the wild card characters * and % as being literal asterisks and percent signs. If the alias names contains either of these two characters and */NOWILD* is not specified, then an error will be signalled and no entry in the database made.

PMDf MAIL commands

ALIAS SHOW

EXAMPLES

In the following example, the first command lists all aliases beginning with "MR". Their attributes are displayed as well. The second command lists all aliases in the database.

```
EMAIL> ALIAS SHOW/ATTRIBUTES MR*
Alias                               Value
-----
mro                                  mrochek@example.com
/PRIVATE/NOEXPAND/BLOCK_RECEIPTS/MAIL_ADDRESS/NOFAX_ADDRESS
mrochek                             mroceck@example.com
/PRIVATE/NOEXPAND/BLOCK_RECEIPTS/MAIL_ADDRESS/NOFAX_ADDRESS
EMAIL> ALIAS SHOW
Alias                               Value
-----
betty                                bjohnson@eng.unical.com
mro                                  mrochek@example.com
mrochek                             mroceck@example.com
steve-fax                           "/fn=1 714 555 1212/at=Steve Ray/"@text-fax
sue                                  st012@sun02.admin.yoyodyne.com
EMAIL>
```

ANSWER

Reply to a mail message.

SYNTAX **ANSWER** *[file-spec[,...]]*

PARAMETERS

file-spec[,...]

Optional list of one or more files to send along with the reply as attachments.

DESCRIPTION

The ANSWER command is identical to the REPLY command. For information on the use of the ANSWER command, consult the description of the REPLY command.

APROPOS

List all commands containing a specified phrase.

SYNTAX **APROPOS** *phrase*

PARAMETERS

phrase

Commands containing this phrase (*i.e.*, string of characters) will be listed.

DESCRIPTION

The APROPOS command is perfect for identifying commands whose name you can't quite recall but have on the "tip of your tongue". Each command containing the specified phrase in the command name, associated qualifier or parameter, or brief description will be listed.

EXAMPLES

Suppose that you know that there are commands to manipulate your mail wastebasket but do not know offhand what those commands are. With the APROPOS command, you can quickly identify them:

```
EMAIL> APROPOS WASTEBASKET
compress/nopurge
compress/purge
purge
set auto_purge
set noauto_purge
set wastebasket_name ...
show wastebasket
EMAIL>
```

The "..." appearing in "set wastebasket_name ..." merely indicates that that command takes one or more parameters.

ATTACH

Switch terminal control to another process in your job.

SYNTAX **ATTACH** *[process-name]*

Qualifiers	Defaults
<i>/PARENT</i>	<i>See text</i>

PARAMETERS

process-name
Optional parameter specifying the name of the process to which to switch.

DESCRIPTION

With the ATTACH command you can switch terminal control between processes that you have created with the SPAWN command.

QUALIFIERS

/PARENT
Attach to the parent process of your current process. This qualifier cannot be used in conjunction with the ***process-name*** parameter.

EXAMPLES

One common use of the ATTACH command is to move between a process running an editor and a process reading mail. The ATTACH command lets you repeatedly leave PMDF MAIL without having to exit and restart PMDF MAIL every time.

PMDF MAIL commands ATTACH

```
$ EDIT WORK.TXT
.
.
.
^Y
$ SPAWN PMDF MAIL
%DCL-S-SPAWNED, process MROCHEK_1 spawned
%DCL-S-ATTACHED, terminal now attached to process MROCHECK_1
EMAIL> READ/NEW
.
.
.
MAIL> ATTACH/PARENT
%DCL-S-RETURNED, control returned to process MROCHECK
.
.
.
^Y
$ ATTACH MROCHECK_1
EMAIL>
```

In the above example, the editing session is interrupted by typing CTRL/Y, and a subprocess running PMDF MAIL is created. After reading some new messages, the ATTACH command is then used to return to the parent process where the editing session is resumed. After again exiting the editor, the DCL ATTACH command is then used to resume the mail reading session.

BACK

When the last command issued was READ, display the previous message, message part, or message page. When the last command issued was DIRECTORY, display the preceding screen of the directory listing.

SYNTAX

BACK

Qualifiers	Defaults
<i>/EDIT</i>	<i>/NOEDIT</i>
<i>/FILTER_CTRL</i>	<i>/NOFILTER_CTRL</i>
<i>/MESSAGE</i>	<i>/MESSAGE</i>
<i>/PAGE</i>	<i>/MESSAGE</i>
<i>/PART</i>	<i>/MESSAGE</i>
<i>/PAUSE</i>	<i>/PAUSE</i>
<i>/TRIM_HEADER</i>	<i>/TRIM_HEADER</i>

PARAMETERS

None.

DESCRIPTION

While in message reading mode, the BACK command displays the previous message, */MESSAGE*, the previous part of a multipart message, */PART*, or the previous page of the current message, */PAGE*.

While in directory listing mode, the BACK command displays the preceding screen of the directory listing.

QUALIFIERS

/ENTIRE
/MESSAGE (default)
/PAGE
/PART

Display the previous message, */MESSAGE* or */ENTIRE*, the previous part of a multipart message, */PART*, or the previous page (screen) of the current message, */PAGE*.

The */PAGE* qualifier is treated as */PART* when the editor is invoked to display the message. When the current message is a single-part message, the commands BACK/*PART* and BACK/*MESSAGE* are equivalent.

PMDF MAIL commands

BACK

/EDIT

/NOEDIT (default)

When */EDIT* is specified, the editor will be invoked to display the message or directory listing. In the case of a message display, this is the default when PMDF MAIL is invoked with the command PMDF MAIL/EDIT=(READ). */NOEDIT* prevents the editor from being invoked.

/FILTER_CTRL

/NOFILTER_CTRL (default)

When */FILTER_CTRL* is specified, 7-bit and 8-bit control characters in messages are filtered out. Messages which contain such control characters can cause problems with the terminal when they are displayed. When */FILTER_CTRL* is specified, such a character is displayed as its hexadecimal value in the format “=XX”.

/PAUSE (default)

/NOPAUSE

When displaying the message, after a page of information has been output PMDF MAIL pauses and requests that you press RETURN if you want to continue reading. To suppress these prompts, specify */NOPAUSE*.

/TRIM_HEADER (default)

/NOTRIM_HEADER

When */NOTRIM_HEADER* is specified, all header lines in the message will appear when the message's header is next displayed. (Note: when you specify */PART* or */PAGE*, it might take several BACK commands to read back to the message's header.) By default, message header lines are trimmed; this behavior is explicitly requested with the */TRIM_HEADER* qualifier.

COMPRESS

Compress a mail file.

SYNTAX **COMPRESS** *[in-file-spec]*

Qualifiers	Defaults
<i>/OUTPUT=out-file-spec</i>	<i>/OUTPUT=in-file-spec</i>
<i>/PURGE</i>	<i>/NOPURGE</i>

PARAMETERS

in-file-spec
Optional parameter specifying the name of the mail file to be compressed.

DESCRIPTION

The COMPRESS command compresses a mail file, making it smaller so that it uses less disk space. Compressing a mail file also provides faster access to folders and messages contained in the file.

If the optional **in-file-spec** parameter is not supplied, then the mail file which is currently open will be compressed. If no mail file is open, then your default mail file will be compressed.

When compressing your file, four steps are taken:

1. A temporary file name MAIL_ *nnnn* _COMPRESS.TMP is chosen; *nnnn* is a unique, four-digit number selected by callable MAIL.
2. The contents of the file to be compressed are copied to the temporary file and compressed. If */PURGE* was specified, then the wastebasket folder of the temporary file is purged and deleted message space reclaimed.
3. The original, uncompressed mail file is renamed to have the extension .OLD.
4. The new, compressed file is renamed from MAIL_ *nnnn* _COMPRESS.TMP to either the name of the original input file if */OUTPUT* was not specified, or to **out-file-spec** otherwise.

After the compression is completed, you probably will want to delete the original, uncompressed file.

PMDF MAIL commands

COMPRESS

QUALIFIERS

/OUTPUT=out-file-spec

Specify an alternate name to use for the compressed mail file. If not specified then the compressed file will have the same name as the input file.

/PURGE

/NOPURGE (default)

By default, the wastebasket folder of the compressed mail file is not purged. Use the */PURGE* qualifier to purge the wastebasket and reclaim the deleted space.

EXAMPLES

In the following example, the currently open mail file is compressed and purged. In the process of compressing the file, informational messages are output.

```
EMAIL> COMPRESS/PURGE
%EMAIL-S-CREATED, D1:[BOB]MAIL_2862_COMPRESS.TMP;1 created
%EMAIL-S-COPIED, D1:[BOB]MAIL.MAI;1 copied to
  D1:[BOB]MAIL_2862_COMPRESS.TMP;1 (31 records)
%EMAIL-S-RENAMED, D1:[BOB]MAIL.MAI;1 renamed to D1:[BOB]MAIL.OLD;2
%EMAIL-S-RENAMED, D1:[BOB]MAIL_2862_COMPRESS.TMP;1 renamed to
  D1:[BOB]MAIL.MAI;1
EMAIL>
```

COPY

Place copies of one or more mail messages into another folder.

SYNTAX **COPY** *folder-name* [*file-spec*]

Qualifiers	Defaults
<i>/ALL</i>	<i>None</i>
<i>/CONFIRM</i>	<i>See text</i>
<i>/MARKED</i>	<i>None</i>
<i>/MESSAGES=number</i>	<i>None</i>
<i>/READ</i>	<i>None</i>
<i>/REPLIED</i>	<i>None</i>

PARAMETERS

folder-name

Required parameter specifying the name of the folder to which to copy the messages. The folder need not already exist.

file-spec

Optional parameter specifying the name of the mail file containing the specified folder. The mail file need not already exist.

DESCRIPTION

The COPY command copies the specified messages to another folder without deleting the specified messages themselves. The messages to be copied are specified with the */ALL*, */MARKED*, */NOMARKED*, */READ*, */NOREAD*, */REPLIED*, and */NOREPLIED* qualifiers. These qualifiers can be combined as demonstrated in the supplied example. If none of these qualifiers are specified then only the last message read will be copied.

The messages are copied into the specified folder. If that folder does not already exist, then you will be asked whether or not it should be created. If you answer in the negative, then the copy operation will be aborted. To select a folder in a different mail file, specify that file's name with the optional ***file-spec*** parameter. If that mail file does not exist, then you will be asked whether or not it should be created. If you omit the ***file-spec*** parameter, then the folder is assumed to be in the current mail file.

Use the MOVE command if you want to copy messages to another folder, deleting them from the current folder in the process. Use the EXTRACT command to extract messages to an ordinary text file.

PMDF MAIL commands

COPY

QUALIFIERS

/ALL

Copy all currently selected messages. Cannot be used in conjunction with /MESSAGES.

/CONFIRM

/NOCONFIRM

When neither /CONFIRM or /NOCONFIRM is specified, you will only be prompted to confirm file or folder creations should the specified file or folder not exist. When /CONFIRM is specified, you will be prompted to confirm each message copy as well as the creation of folders and files. /NOCONFIRM specifies that all prompting is to be suppressed; the file and folder will be created if necessary and all selected messages copied.

/MARKED

/NOMARKED

Copy all currently selected messages which have been previously marked, /MARK, or are not marked, /NOMARK.

/MESSAGES=(number[,...])

Specifies the identification number or numbers of the messages to be copied. Cannot be used in conjunction with /ALL.

/READ

/NOREAD

Copy all currently selected messages which have been previously read, /READ, or are unread, /NOREAD.

/REPLIED

/NOREPLIED

Copy all currently selected messages which have been replied to, /REPLIED, or have not been replied to, /NOREPLIED.

EXAMPLES

In the following example, the COPY/REPLIED/NOMARKED command is used to copy to the NEWMAIL folder in the mail file NEWMAIL.MAI all messages which have both been answered and not marked with the MARK command.

```
EMAIL> SET FOLDER NEWMAIL
EMAIL> COPY/NOMARK/REPLIED NEWMAIL NEWMAIL.MAI
File D1:[BOB]NEWMAIL.MAI; does not exist.
Do you want to create it (Y/N, default is N)? Y
%MAIL-S-CREATED, D1:[BOB]NEWMAIL.MAI;1 created
EMAIL>
```

CURRENT

Redisplay the current message.

SYNTAX

CURRENT

Qualifiers

/EDIT
/FILTER_CTRL
/MESSAGE
/PAGE
/PART
/PAUSE
/TRIM_HEADER

Defaults

/NOEDIT
/NOFILTER_CTRL
/MESSAGE
/MESSAGE
/MESSAGE
/PAUSE
/TRIM_HEADER

PARAMETERS

None.

DESCRIPTION

The CURRENT command redisplay the message currently being read. The display begins at the start of the message.

QUALIFIERS

/ENTIRE (default)
/MESSAGE
/PAGE
/PART

Redisplay the current message starting from the beginning of the message, */ENTIRE*, the current message part, */MESSAGE*, the current body part of a multipart message, */PART*, or the current page (screen) of the current, */PAGE*.

The */PAGE* qualifier is treated as */PART* when the editor is invoked to display the message. When the current message is a single-part message, the commands *CURRENT/PART*, *CURRENT/MESSAGE* and *CURRENT/ENTIRE* are equivalent.

/EDIT
/NOEDIT (default)

When */EDIT* is specified, the editor will be invoked to display the message. This is the default when PMDF MAIL is invoked with the command *PMDF MAIL/EDIT=READ*. */NOEDIT* prevents the editor from being invoked.

PMDF MAIL commands

CURRENT

/FILTER_CTRL

/NOFILTER_CTRL (default)

When */FILTER_CTRL* is specified, 7-bit and 8-bit control characters in messages are filtered out. Messages which contain such control characters can cause problems with the terminal when they are displayed. When */FILTER_CTRL* is specified, such a character is displayed as its hexadecimal value in the format “=XX”.

/PAUSE (default)

/NOPAUSE

When displaying the message, after a page of information has been output PMDF MAIL pauses and requests that you press if you want to continue reading. To suppress these prompts, specify */NOPAUSE*.

/TRIM_HEADER (default)

/NOTRIM_HEADER

When */NOTRIM_HEADER* is specified, all header lines in the message will appear when the message's header is next displayed.

DEFINE

Bind a command to a sequence of one or more keyboard keys.

SYNTAX **DEFINE** *key-sequence* [*string*[,...]]

Qualifiers	Defaults
/ECHO	/ECHO
/IF_STATE= <i>state</i>	/NOIF_STATE
/KEY	None
/LOCK_STATE	/NOLOCK_STATE
/LOG	/NOLOG
/SET_STATE= <i>state</i>	/NOSET_STATE
/TERMINATE	/NOTERMINATE

PARAMETERS

key-sequence

The key sequence which, when typed, should be replaced by **string** or induce the specified state change, or both.

***string*[,...]**

Optional list of one or more strings (*e.g.*, commands) to bind to the specified key sequence. When more than one string is specified, the strings will be delimited by carriage returns.

DESCRIPTION

The DEFINE command allows arbitrary strings of text to be bound to specified keyboard sequences. When the specified keyboard sequence is input, it is replaced by the bound text strings. This allows command definitions to be established. For instance, the definition

```
EMAIL> DEFINE CLEAN "MOVE/REPLIED OLD_MAIL", "DIRECTORY NEWMAIL"/TERMINATE
EMAIL>
```

causes the two commands "MOVE/REPLIED OLD_MAIL" and "DIRECTORY NEWMAIL" to be issued whenever "CLEAN" is typed.

The DEFINE/KEY command provides a convenient way to bind text strings to specific keyboard keys. When /KEY is specified, the **key-sequence** parameter should be the name of a single keyboard key. The accepted names are any single keystroke (*e.g.*, "a", "A", "~", *etc.*), or any of the special names assigned to the function, editing, cursor, or keypad keys shown in the table below:

F1—F20	Function F1—F20 keys
--------	----------------------

PMDF MAIL commands

DEFINE

PF1—PF4	Keypad PF1, PF2, PF3, and PF4 keys
KP0—KP9	Keypad 0—9 keys
PERIOD	Keypad . key
COMMA	Keypad , key
MINUS	Keypad - key
ENTER	Keypad Enter key
DO, HELP	Help and Do keys (F15 and F16)
E1, FIND	Find key
E2, INSERT_HERE	Insert Here key
E3, REMOVE	Remove key
E4, SELECT	Select key
E5, PREV_SCREEN	Previous Screen key
E6, NEXT_SCREEN	Next Screen key
UP, DOWN	Up and down cursor keys
LEFT, RIGHT	Left and right cursor keys

Bindings made with the DEFINE command are only honored at the EMAIL> command prompt. They have no effect at other prompts (*e.g.*, Subject:) or while composing a message.

Note: Unlike the VMS MAIL DEFINE/KEY command where an empty string, "", must be used for bindings with no bound string, with PMDF MAIL you *must* omit the bound string parameter altogether.

QUALIFIERS

/ECHO (default)

Specifies whether the bound text string is echoed after the associated key sequence is input. While /NOECHO is accepted, it is ignored.

/IF_STATE=state[,...]

/NOIF_STATE (default)

Specifies a list of states, any one of which must be set in order to enable the specified binding. If this qualifier is omitted or negated, then the current state prevails.

/LOCK_STATE

/NOLOCK_STATE (default)

Retains the state specified with the /SET_STATE qualifier until another /SET_STATE qualifier is used to change it. The default is /NOLOCK_STATE.

/LOG

/NOLOG (default)

Specifies whether informational messages are displayed when a binding is successfully made.

/SET_STATE=state
/NOSET_STATE

Associates a state with the keyboard binding being defined. When the binding is used (*i.e.*, when **key-sequence** is input), then the current state will be set to the specified state. If this qualifier is omitted or negated, the state remains unchanged when the binding is used.

/SET_STATE and */TERMINATE* cannot both be used by a single binding. The state is always cleared by a binding with */TERMINATE*.

/TERMINATE
/NOTERMINATE (default)

Determines whether a carriage return is issued after expanding a keyboard binding. That is, whether the result of the binding is executed as a command when you input the associated keyboard sequence. When */NOTERMINATE* is used, you must press `RETURN` to execute the command line.

/SET_STATE and */TERMINATE* cannot both be used by a single binding. The state is always cleared by a binding with */TERMINATE*.

EXAMPLES

1 EMAIL> DEFINE/KEY F17 DIRECTORY
EMAIL>

This example illustrates how to bind the DIRECTORY command to the F17 function key. When that function key is pressed, "DIRECTORY" will appear on the command line after which you can either press `RETURN` to issue the command or enter a folder name followed by `RETURN`.

2 EMAIL> DEFINE/KEY F18 "DIRECTORY MAIL"/TERMINATE
EMAIL>

This example illustrates how to bind the command "DIRECTORY MAIL" to the F18 function key. When that function key is pressed, the DIRECTORY MAIL command will be issued. Because of the space in the DIRECTORY command, the command was enclosed in quotes.

3 EMAIL> DEFINE/KEY F11 "PRINT/TERMINAL=PRINTER_PORT"/TERMINATE
EMAIL>

This example illustrates how to bind the command "PRINT/TERMINAL=PRINTER_PORT" to the F11 function key. Because of the slash, /, in the PRINT command, the command was enclosed in quotes.

4 EMAIL> DEFINE/KEY F11/SET_STATE=READING/LOCK_STATE READ
EMAIL> DEFINE/KEY F18/IF_STATE=READING "REPLY/EXTRACT/ALL"/TERMINATE
EMAIL> DEFINE/KEY F19/IF_STATE=READING "FILE"
EMAIL>

This example illustrates the use of states to establish key definitions which are effective only if the key F11 is first pressed.

PMDf MAIL commands

DELETE

DELETE

Delete one or more messages.

SYNTAX **DELETE** *[message-number[,...]]*

Qualifiers	Defaults
<i>/ALL</i>	<i>None</i>
<i>/CONFIRM</i>	<i>/NOCONFIRM</i>
<i>/MARKED</i>	<i>None</i>
<i>/READ</i>	<i>None</i>
<i>/REPLIED</i>	<i>None</i>

PARAMETERS

message-number[,...]

Optional list of integers specifying which messages to delete. Ranges are permitted (*e.g.*, 5-7).

DESCRIPTION

The DELETE command will delete one or more of the currently selected messages. If the optional **message-number** parameter is omitted, then only the last message read will be deleted. When the */ALL* qualifier is specified, all currently selected messages are deleted.

The message numbers are those shown in the directory listing (leftmost column) and on the top of the screen when the message is displayed.

Deleted messages are moved to the wastebasket folder of the currently open mail file. Should you accidentally delete the wrong messages, move to the wastebasket folder with any of the commands SELECT, DIRECTORY, or SET FOLDER, and then use the MOVE command to move the messages back out of that folder. Use the PURGE command to delete messages from the wastebasket folder.

QUALIFIERS

/ALL

Delete all currently selected messages. Cannot be used in conjunction with */MARKED*, */NOMARKED*, */READ*, */NOREAD*, */REPLIED*, or */NOREPLIED*.

/CONFIRM

/NOCONFIRM (default)

When */CONFIRM* is specified, you will be prompted to confirm the deletion of each message.

/MARKED

/NOMARKED

Specify */MARK* to delete all currently selected messages which are marked; specify */NOMARK* to delete all currently selected messages which are not marked.

/READ

/NOREAD

Specify */READ* to delete all currently selected messages which have been read; specify */NOREAD* to delete all currently selected unread messages.

/REPLIED

/NOREPLIED

Specify */REPLIED* to delete all currently selected messages which have been replied to; specify */NOREPLIED* to delete all currently selected messages which have not been replied to.

EXAMPLES

1 EMAIL> **DIRECTORY**

#	From	Date	Subject	MAIL
1	BOB@EXAMPLE.COM	16-JAN-2012	Trek spoof	
2	BOB@EXAMPLE.COM	16-JAN-2012	The Simpsons	
3	nsb@thumper.bellc	17-JAN-2012	Please check this out	
4	sau@sleepy.bellco	17-JAN-2012	A Multi-media test	
5	nsb@sigurd.innos	17-JAN-2012	How MIME looks in AMS (MIME format)	
6	moore@cs.utk.edu	17-JAN-2012	RE: New richtext generation -- opinions?	
7	bob@panda.com	17-JAN-2012	RE: more content-charset stuff	
8	ccrk@media-lab.mi	17-JAN-2012	RE: a response to MIME	
9	sue@CAC.Washingto	17-JAN-2012	RE: audio mail	
10	sau@sleepy.bellco	17-JAN-2012	RE: your multipart stuff	
11	sau@sleepy.bellco	17-JAN-2012	A picture	
12	nsb@thumper.bellc	17-JAN-2012	Testing Multipart messaging	

EMAIL> **DELETE 3-6,1,12**

EMAIL> **DIRECTORY**

#	From	Date	Subject	MAIL
---	------	------	---------	------

PMDF MAIL commands

DELETE

```
1 (deleted)
2 BOB@EXAMPLE.COM    16-JAN-2012    The Simpsons
3 (deleted)
4 (deleted)
5 (deleted)
6 (deleted)
7 bob@panda.com      17-JAN-2012    RE: more content-charset stuff
8 ccrk@media-lab.mi 17-JAN-2012    RE: a response to MIME
9 sue@CAC.Washingto 17-JAN-2012    RE: audio mail
10 sau@sleepy.bellco 17-JAN-2012    RE: your multipart stuff
11 sau@sleepy.bellco 17-JAN-2012    A picture
12 (deleted)
```

EMAIL>

This example illustrates how to delete messages 1, 3, 4, 5, 6, and 12.

2 EMAIL> DIRECTORY WASTEBASKET

```
                                     WASTEBASKET
# From          Date          Subject
1 BOB@EXAMPLE.COM    16-JAN-2012    Trek spoof
2 nsb@thumper.bellc 17-JAN-2012    Please check this out
3 sau@sleepy.bellco 17-JAN-2012    A Multi-media test
4 nsb@sigurd.innos  17-JAN-2012    How MIME looks in AMS (MIME format)
5 moore@cs.utk.edu   17-JAN-2012    RE: New richtext generation -- opinions?
6 nsb@thumper.bellc 17-JAN-2012    Testing Multipart messaging
```

EMAIL>

This example is a continuation of the previous one. Here the **DIRECTORY WASTEBASKET** command is used to select the wastebasket folder where the previously deleted messages now resided. They can be moved out of the wastebasket folder with the **MOVE** command or irrevocably deleted with the **PURGE** command.

DIRECTORY

List any currently selected messages.

SYNTAX

DIRECTORY [*folder-name* [*mail-file-spec*]]

Qualifiers	Defaults
<i>/BEFORE=</i> date	None
<i>/CC_SUBSTRING=</i> text	None
<i>/EDIT</i>	<i>/NOEDIT</i>
<i>/FIRST</i>	None
<i>/FROM_SUBSTRING=</i> text	None
<i>/FULL</i>	<i>/NOFULL</i>
<i>/LAST</i>	None
<i>/MARKED</i>	None
<i>/NEW</i>	None
<i>/OUTPUT=</i> out-file-spec	None
<i>/REPLIED</i>	None
<i>/SINCE=</i> date	None
<i>/SUBJECT_SUBSTRING=</i> text	None
<i>/START=message-number</i>	<i>/START=1</i>
<i>/TO_SUBSTRING=</i> text	None

PARAMETERS

folder-name

Optional parameter specifying the name of the folder to select messages from.

mail-file-spec

Optional parameter specifying the mail file to open.

DESCRIPTION

The DIRECTORY command lists any currently selected messages. If a folder name or mail file parameter is specified or any of the qualifiers /BEFORE, /CC_SUBSTRING, /FROM_SUBSTRING, /NEW, /REPLIED, /SINCE, /SUBJECT_SUBSTRING, or /TO_SUBSTRING are used, then a new set of messages will be selected.

If no messages are currently selected, and no folder name is specified, then the default folder for the open mail file is used. (If no mail file is open, then the default mail file, MAIL.MAI, is first opened.) The name of the default folder depends upon which mail file is open. For the default mail file, the default folder is NEWMAIL if it contains any new messages, and MAIL otherwise. When a mail file other than the default file is open, the default folder is the folder with the same name as the mail file itself (*e.g.*, JOKES is the default folder for the mail file JOKES.MAI).

PMDF MAIL commands

DIRECTORY

If you specify a folder that does not exist, PMDF MAIL displays the following message:

```
%EMAIL-E-NOTEXIST, folder "folder-name" does not exist
```

where *folder-name* is the folder you tried to select.

QUALIFIERS

/BEFORE[=date]

Select messages dated before the specified date. All the messages received before the current day are selected if no date is specified.

/CC_SUBSTRING=text

Select messages containing **text** in the VMS MAIL Cc: header line of the message.

/EDIT

/NOEDIT (default)

Invoke the editor to display the listing.

/FIRST

/LAST

Begin the directory list with the first message, */FIRST*, or last message, */LAST*.

/FROM_SUBSTRING=text

Select messages containing **text** in the VMS MAIL From: header line of the message.

/FOLDER

Consult the DIRECTORY/FOLDER command documentation.

/FULL

/NOFULL (default)

The */FULL* qualifier requests that an extended, verbose directory listing be generated.

/MARKED

/NOMARKED

Select messages that have been marked, */MARKED*, or are not marked, */NOMARKED*.

/NEW

Select new (unread) messages from the NEWMAIL folder of your default mail file, MAIL.MAI. If any other mail file is open, it is closed and the default mail file opened.

/OUTPUT=out-file-spec

Output the directory listing to the specified file.

/REPLIED

/NOREPLIED

Select messages that have been replied to, */REPLIED*, or have not been replied to, */NOREPLIED*.

/SINCE[=date]

Select messages dated since the specified date. If no date is specified, all the messages received on the current day are selected.

/START=message-number

Specify the message number to begin the directory listing at.

/SUBJECT_SUBSTRING=text

Select messages containing **text** in the VMS MAIL Subject: header line of the message.

/TO_SUBSTRING=text

Select messages containing **text** in the VMS MAIL To: header line of the message.

EXAMPLES

1 EMAIL> DIRECTORY/NEW

```

# From          Date          Subject
1 BOB           23-FEB-2012 Apples
2 SID           23-FEB-2012 Oranges
3 info-pmdf@ymir.cl 24-FEB-2012 PMDF MAIL!
4 BOB           24-FEB-2012 RE: Apples
```

EMAIL>

In this example, the DIRECTORY/NEW command is used to select any new, unread mail messages and display a listing of them.

2 EMAIL> DIRECTORY/NEW/FROM_SUBSTRING=BOB

```

# From          Date          Subject
1 BOB           23-FEB-2012 Apples
2 BOB           24-FEB-2012 RE: Apples
```

EMAIL>

Here, the /FROM qualifier is used with DIRECTORY/NEW so as to select and list only those new messages with a From: field including the string "BOB".

3 EMAIL> DIRECTORY/FOLDER

```
Listing of folders in D1:[BOB]MAIL.MAI;1
  Press CTRL/C to cancel listing
```

```
MAIL
WASTEBASKET
```

EMAIL> DIRECTORY WASTEBASKET

```

# From          Date          Subject
1 info-pmdf@ymir.cl 21-FEB-2012 RE: Who's Mrochek?
```

EMAIL>

In this example, a listing of the available folders is obtained with the DIRECTORY/FOLDER command. Next, the WASTEBASKET folder is selected and its contents displayed with the DIRECTORY WASTEBASKET command.

DIRECTORY/FOLDER

List the folders present in the current mail file.

SYNTAX **DIRECTORY/FOLDER** [*folder-pattern* [*mail-file-spec*]]

Qualifiers	Defaults
<i>/EDIT</i>	<i>/NOEDIT</i>
<i>/EXCLUDE</i>	<i>None</i>
<i>/NEW</i>	<i>None</i>
<i>/OUTPUT=out-file-spec</i>	<i>None</i>
<i>/START=name</i>	<i>None</i>

PARAMETERS

folder-pattern

Optional folder name pattern. Can contain wild cards.

mail-file-spec

Optional parameter specifying the mail file to open.

DESCRIPTION

Use the DIRECTORY/FOLDER command to obtain a listing of the folders contained in the current mail file. If no mail file is currently open, then your default mail file will be opened first. To cancel the listing, press CTRL/C.

If a mail file specification is supplied, then any currently opened mail file will first be closed and then the specified mail file will be opened. The folder listing will be of the folders in the newly opened mail file.

When an optional folder name pattern is supplied, only those folders whose names match the pattern will be displayed.

QUALIFIERS

/EDIT

/NOEDIT (default)

Invoke the editor to display the listing.

/EXCLUDE

Display those folder names which do not match the folder name pattern.

/NEW

Mark with an asterisk any folder which contains unread messages.

/OUTPUT=out-file-spec

Output the directory listing to the specified file.

/START=name

Only list folders whose names are the same as the specified starting name or lexicographically follow it.

EXAMPLES

1 EMAIL> **DIRECTORY/FOLDER**
Listing of folders in D1:[BOB]MAIL.MAI;1
Press CTRL/C to cancel listing
MAIL NEWMAIL
WASTEBASKET
EMAIL>

Here the **DIRECTORY/FOLDER** command is used to list the folders in the currently open mail file.

2 EMAIL> **DIRECTORY/FOLDER/START=W**
Listing of folders in D1:[BOB]MAIL.MAI;1
Press CTRL/C to cancel listing
WASTEBASKET
EMAIL>

In this example, the **/START** qualifier specifies that only folders with names beginning with "W", "X", "Y", or "Z" are to be listed.

PMDF MAIL commands

EDIT

EDIT

Invoke the editor to edit or view a file.

SYNTAX

EDIT [*in-file-spec*]

Qualifiers	Defaults
<i>/COMMAND=cmd-file-spec</i>	<i>Editor dependent</i>
<i>/CREATE</i>	<i>None</i>
<i>/JOURNAL=jou-file-spec</i>	<i>Editor dependent</i>
<i>/OUTPUT=out-file-spec</i>	<i>/OUTPUT=in-file-spec</i>
<i>/READ_ONLY</i>	<i>None</i>
<i>/RECOVER</i>	<i>None</i>

PARAMETERS

in-file-spec

Optional parameter specifying the name of the file to edit.

DESCRIPTION

The EDIT command invokes the editor selected with the SET EDITOR command. If an input file is specified, then that file will be edited. Otherwise, the editor will be invoked with no input file specified. When you exit the editor, control is returned to PMDF MAIL.

QUALIFIERS

/COMMAND=cmd-file-spec

/NOCOMMAND

The */COMMAND* qualifiers specifies the name of an EDT or TPU startup command file. When no command file is specified, the default EDTINI.EDT or TPU\$COMMAND.TPU file set up for the DCL EDIT/EDT or EDIT/TPU command will be used. The */NOCOMMAND* qualifier specifies that no startup file is to be used.

These two qualifiers have no effect when used with any editor other than EDT or TPU.

/CREATE
/NOCREATE

When you specify */CREATE*, the input file will, before the editor is invoked, be created if it does not already exist. If you did not specify an input file name, then you will be prompted for one.

If you specify */NOCREATE*, then the editor will immediately exit if the input file does not exist. The */NOCREATE* qualifier can only be used with the EDT and TPU editors; it has no effect when any other editor is used.

/JOURNAL=jou-file-spec
/NOJOURNAL

With the */JOURNAL* qualifier, you can specify the name of a journal file to be opened when EDT or TPU is invoked. To prevent a journal file from being opened, specify */NOJOURNAL*. These two qualifiers have no effect when any other editor is used.

/OUTPUT=out-file-spec
/NOOUTPUT

Specify the name of the output file to generate upon exiting the editor. When the */NOOUTPUT* qualifier is used, the editor is invoked in a “read only” mode. However, unlike the */READ_ONLY* qualifier, a journal file will be created. The */NOOUTPUT* qualifier has no effect when used with any editor other than EDT or TPU.

/READ_ONLY

Invoke the editor in a “read only” mode. No journal file or output file will be produced. If the input file does not exist, then the editor will immediately exit. This qualifier has no effect when used with any editor other than EDT or TPU. If you use EDT, then when you exit you must use EDT’s QUIT command; if you use EDT’s EXIT command, then you will have to supply a file specification.

/RECOVER

Recover a previous EDT or TPU editing session which was prematurely aborted and for which a journal file exists. This qualifier has no effect if used with any editor other than EDT or TPU

EXAMPLES

1 EMAIL> EDIT REPLY.TXT
 .
 .
 .
 EMAIL> SEND REPLY.TXT

In the above example, the editor is invoked to edit the file REPLY.TXT. After the editor is exited, control is returned to PMDF MAIL at which point the file is mailed with the SEND command.

2 EMAIL> EDIT/READ_ONLY LOGIN.COM

This example shows how to invoke the editor to read the file LOGIN.COM. The */READ_ONLY* qualifier causes the file to be accessed in a read only mode.

PMDF MAIL commands

ERASE

ERASE

Erase the screen.

SYNTAX

ERASE

Command Qualifiers	Defaults
--------------------	----------

None.

None.

PARAMETERS

None.

DESCRIPTION

The ERASE command clears your terminal screen.

EXIT

Exit from PMDF MAIL.

SYNTAX

EXIT

Command Qualifiers	Defaults
---------------------------	-----------------

None.

None.

PARAMETERS

None.

DESCRIPTION

The EXIT command exits you from PMDF MAIL. When you exit PMDF MAIL, any messages in the wastebasket folder are deleted unless you have previously issued the SET NOAUTO_PURGE command. Use the QUIT command if you want to exit without purging your wastebasket.

EXTRACT

Extract a mail message to an external file.

SYNTAX **EXTRACT** *file-spec[,...]*

Qualifiers	Defaults
<i>/ALL</i>	<i>/NOALL</i>
<i>/APPEND</i>	<i>/NOAPPEND</i>
<i>/CONFIRM</i>	<i>/NOCONFIRM</i>
<i>/ENTIRE</i>	<i>/PART</i>
<i>/DIGEST</i>	<i>/DIGEST</i>
<i>/HEADER</i>	<i>/HEADER</i>
<i>/LOG</i>	<i>/LOG</i>
<i>/MARKED</i>	<i>None</i>
<i>/MBOX</i>	<i>/NOMBOX</i>
<i>/MESSAGE</i>	<i>/PART</i>
<i>/PART</i>	<i>/PART</i>
<i>/READ</i>	<i>None</i>
<i>/REPLIED</i>	<i>None</i>
<i>/TRIM_HEADER</i>	<i>/NOTRIM_HEADER</i>

PARAMETERS

file-spec[,...]

Required parameter specifying one or more files to extract the message to. Multiple files should be specified when a multipart message with non-text attachments is extracted.

DESCRIPTION

The EXTRACT command extracts one or more messages or message parts to a file. Unless */ALL* is specified, only the currently selected message is extracted. If it is a multipart message, then only the last read part of that message is extracted. The */MESSAGE* and */ENTIRE* qualifiers modify this behavior.

When */ALL* is used, all of the currently selected messages are extracted to a single message digest file. Similarly, */MARKED* and */NOMARKED* can be used to extract, respectively, all marked or unmarked messages to a single digest file. Specify */NODIGEST* to obtain a form-feed delimited file rather than a message digest.

QUALIFIERS

/ALL

/NOALL (default)

Extract all currently selected messages. Messages will be extracted into a file formatted as a message digest. Cannot be used in conjunction with */MARKED*, */NOMARKED*, */READ*, */NOREAD*, */REPLIED*, or */NOREPLIED*.

/APPEND

/NOAPPEND (default)

If the output file already exists, then append the message to it without creating a new file.

/CONFIRM

/NOCONFIRM (default)

When you specify */CONFIRM*, you must approve the extraction of each message. That is, for each message to be extracted, you will be prompted. If you reply to the prompt in the affirmative, then the message will be extracted; otherwise, it will be skipped.

/ENTIRE

/MESSAGE

/PART (default)

By default, when you extract a multipart or nested message, only the current part is extracted. This behavior is explicitly requested with the */PART* qualifier. To extract the entire message, specify */ENTIRE*; to only extract the current part identifiable as a message, specify */MESSAGE*.

When extracting a single-part message which is not nested, the */ENTIRE*, */PART*, and */MESSAGE* qualifiers are identical and have no effect. */ENTIRE* is assumed when */ALL* is specified; */MESSAGE* and */PART* have no effect in that case.

/DIGEST (default)

/NODIGEST

When */NODIGEST* is specified, multiple messages output to a file will be separated by form feeds. When */DIGEST* is specified, a MIME message/digest format will be used.

/HEADER (default)

/NOHEADER

By default, when the message is extracted its header is included. Specify */NOHEADER* to omit the message header.

/LOG (default)

/NOLOG

For each output file created, output to the terminal a status message. To suppress this information, use the */NOLOG* qualifier.

/MARKED

/NOMARKED

Extract all messages that have been marked, */MARKED*, or are unmarked, */NOMARKED*. Cannot be used in conjunction with */ALL*.

PMDF MAIL commands

EXTRACT

/MBOX

/NOMBOX (default)

The */MBOX* qualifier causes the extracted message(s) to be stored in UNIX Berkeley mailbox format; this can be useful if you want to physically move your mailbox to a UNIX system. */NOMBOX* is the default.

/READ

/NOREAD

Extract all messages that have been read, */READ*, or are unread, */NOREAD*. Cannot be used in conjunction with */ALL*.

/REPLIED

/NOREPLIED

Extract all messages that have been replied to, */REPLIED*, or have not been replied to, */NOREPLIED*. Cannot be used in conjunction with */ALL*.

/TRIM_HEADER

/NOTRIM_HEADER (default)

By default, the full message header appears in each extracted message. Use the */TRIM_HEADER* qualifier to apply header trimming to each message prior to extracting it.

EXAMPLES

```
1 EMAIL> READ
Message MAIL 1                                     2-FEB-2012 12:13:18.01
Date: Tue, 2 Feb 2012 12:13:18 PDT
From: bob@example.com
To: staff@example.com
Subject: Vacation schedule
.
.
.
EMAIL> EXTRACT SCHEDULE.TXT
%EMAIL-S-CREATED, D1:[SUE]SCHEDULE.TXT created
EMAIL> EXIT
$ TYPE SCHEDULE.TXT
Return-path: <bob@example.com>
Received: from EXAMPLE.COM by EXAMPLE.COM (PMDF V6.5#5674)
  id <01GV52QDNTPS8WW845@EXAMPLE.COM>; Tue, 2 Feb 2012 12:13:44 PDT
Date: Tue, 2 Feb 2012 12:13:18 -0700 (PDT)
From: bob@example.com
To: staff@example.com
Subject: Vacation schedule
Message-id: <01GV52QDNTPU8WW845@EXAMPLE.COM>
MIME-version: 1.0
Content-type: TEXT/PLAIN; CHARSET=US-ASCII
Content-transfer-encoding: 7BIT
.
.
.
$
```

In this example a message is extracted to the file SCHEDULE.TXT. Note that the entire

message header, which was suppressed when the message was displayed with the READ command, appears in the extracted file.

```
2 EMAIL> READ/NEW
Message NEWMAIL 1.0.0                                25-FEB-2012 15:50:14.77

Date: Thu, 25 Feb 2012 15:50:01 -0700 (PDT)
From: bob@example.com
Subject: A picture
To: sue@example.com

Message contains multiple parts.  Press return to read the next part...

EMAIL> RETURN
Message NEWMAIL 1.1.1                                25-FEB-2012 15:50:14.77

Content-type: image/gif

[Viewing GIF image data with XV.  Type Q in image window to close window.]

EMAIL> EXTRACT [SUE.PICTURES]BOAT.GIF
%EMAIL-S-CREATED, D1:[SUE.PICTURES]BOAT.GIF;1 created
EMAIL>
```

In this example, a multipart message containing a GIF image is displayed. After displaying the image, it is extracted to the file BOAT.GIF with the EXTRACT command. Only the current message part is extracted since /MESSAGE or /ENTIRE was not specified. The extracted file contains the GIF image data and can be viewed at a later time with a GIF viewer such as XV.

PMDF MAIL commands

FILE

FILE

Move one or more mail messages to another folder.

SYNTAX **FILE** *folder-name [file-spec]*

DESCRIPTION

The FILE command is identical to the MOVE command. For information on the use of the FILE command, consult the description of the MOVE command.

FIRST

Read the first message of the current folder, or the first part or page of the current message.

SYNTAX

FIRST

Qualifiers	Defaults
<i>/EDIT</i>	<i>/NOEDIT</i>
<i>/FILTER_CTRL</i>	<i>/NOFILTER_CTRL</i>
<i>/MESSAGE</i>	<i>/MESSAGE</i>
<i>/PAGE</i>	<i>/MESSAGE</i>
<i>/PART</i>	<i>/MESSAGE</i>
<i>/PAUSE</i>	<i>/PAUSE</i>
<i>/TRIM_HEADER</i>	<i>/TRIM_HEADER</i>

PARAMETERS

None.

DESCRIPTION

The FIRST command displays the first message from those currently selected, /MESSAGE, or the first part, /PART, or page, /PAGE, of the current message.

QUALIFIERS

/EDIT

/NOEDIT (default)

When /EDIT is specified, the editor will be invoked to display the message. This is the default when PMDF MAIL is invoked with the command PMDF MAIL/EDIT=(READ). /NOEDIT prevents the editor from being invoked.

/FILTER_CTRL

/NOFILTER_CTRL (default)

When /FILTER_CTRL is specified, 7-bit and 8-bit control characters in messages are filtered out. Messages which contain such control characters can cause problems with the terminal when they are displayed. When /FILTER_CTRL is specified, such a character is displayed as its hexadecimal value in the format "=XX".

/ENTIRE

/MESSAGE (default)

/PAGE

PMDf MAIL commands

FIRST

/PART

Display the first message of those currently selected, /MESSAGE or /ENTIRE, or the first part, /PART, or page, /PAGE, of the current message.

The /PAGE qualifier is treated as /PART when the editor is invoked to display the message. When the current message is a single-part message, the commands FIRST/PART and CURRENT/MESSAGE are equivalent.

/PAUSE (default)

/NOPAUSE

When displaying the message, after a page of information has been output PMDF MAIL pauses and requests that you press if you want to continue reading. To suppress these prompts, specify /NOPAUSE.

/TRIM_HEADER (default)

/NOTRIM_HEADER

When /NOTRIM_HEADER is specified, all header lines in the message will appear when the header is next displayed. By default, message header lines are trimmed; this behavior is explicitly requested with the /TRIM_HEADER qualifier.

FORWARD

Forward a message.

SYNTAX

FORWARD [*file-spec*[,...]]

Qualifiers	Defaults
/ABORT	See text
/ALL	/NOALL
/BCC	/NOBCC_PROMPT
/BCC_LIST=address	None
/BCC_PROMPT	/NOBCC_PROMPT
/CC	See text
/CC_LIST=address	None
/CC_PROMPT	See text
/COMMENTS	See text
/CONFIRM	/NOCONFIRM
/DELAY_WARNING	/DELAY_WARNING
/DELIVERY_RECEIPT	See text
/DIGEST=number	None
/EDIT	/NOEDIT
/ENCAPSULATE	/ENCAPSULATE
/ENTIRE	/MESSAGE
/FAX_ROUTING=routing	None
/FROM=address	/NOFROM
/INSERT	See text
/IGNORE	See text
/LAST	/NOLAST
/MARKED	None
/MESSAGE	/MESSAGE
/MULTIPLE	/SINGLE
/PART	/MESSAGE
/PERSONAL_NAME=name	See text
/PRIORITY=priority	See text
/READ	None
/READ_RECEIPT	See text
/REMOVE	/NOREMOVE
/REPLIED	None
/REPLY_TO=address	See text
/RETURN_CONTENT	/RETURN_CONTENT
/SELF	See text
/SENSITIVITY=sensitivity	See text
/SIGNATURE=text	See text
/SUBADDRESS	None
/SUBJECT=subject	See text
/TO	/TO_PROMPT
/TO_LIST=address	None
/TO_PROMPT	/TO_PROMPT
/TRIM_HEADER	/NOTRIM_HEADER

PMDF MAIL commands

FORWARD

/USER=username

None

Positional Qualifiers

/BLOCK
/EIGHTBIT=option
/ENCODING=encoding
/FILENAME=name
/RECORD
/TEXT

Defaults

/TEXT
/EIGHTBIT=LEAVE
None
/NOFILENAME
/TEXT
/TEXT

PARAMETERS

file-spec[,...]

Optional list of one or more files to include with the forwarded message.

DESCRIPTION

Either the FORWARD or REDISTRIBUTE command can be used to forward a message to other individuals. However, unlike the REDISTRIBUTE command, the FORWARD command allows you to modify and annotate the message prior to forwarding it.

The forwarded message will be a MIME message with a content type of MESSAGE/RFC822. It will appear as a message which contains a message. The “contained” message is the original message which you forwarded.

QUALIFIERS

/ALL

/NOALL

Forward all currently selected messages. The messages will be forwarded as a message digest.

/ABORT

/IGNORE

The /ABORT qualifier causes the message forward to fail if any of the To:, Cc:, or Bcc: addresses prove to be illegal. The /IGNORE qualifier permits the message to be forwarded provided that at least one of the addresses is legal. The illegal addresses are ignored and will not appear in the message’s header. The default behavior, if neither /ABORT or /IGNORE are specified, is to prompt you when any of the addresses are illegal. You will be given the choice of whether to cancel the forwarding or to go ahead and forward the message to only the legal addresses.

/BCC
/BCC_LIST=address[,...]
/BCC_PROMPT
/NOBCC_PROMPT

By default, you are prompted for Bcc: (blind carbon copy) addresses only when you specify either the */BCC* or */BCC_PROMPT* qualifier.

If you specify */BCC_PROMPT*, you will be presented with a “Bcc:” prompt to which you can specify zero or more Bcc: addresses. Specifying */NOBCC_PROMPT* inhibits Bcc: prompting. You can use the */BCC_LIST* qualifier to specify one or more Bcc: addresses on the FORWARD command line itself.

The */BCC* qualifier is an abbreviation for */BCC_PROMPT*.

/CC
/CC_LIST=address[,...]
/CC_PROMPT
/NOCC_PROMPT

By default, you are prompted for Cc: (carbon copy) addresses only when you have previously used the SET CC_PROMPT command. The */CC_LIST*, */CC_PROMPT*, and */NOCC_PROMPT* qualifiers override this behavior.

If you specify the */CC_PROMPT* qualifier, you will be presented with a “Cc:” prompt to which you can specify zero or more Cc: addresses. Specifying */NOCC_PROMPT* inhibits Cc: prompting. You can use the */CC_LIST* qualifier to specify one or more Cc: addresses on the FORWARD command line itself.

The */CC* qualifier is an abbreviation for */CC_PROMPT*.

/COMMENTS=comment
/NOCOMMENTS

Normally, a Comments: header line is generated only when you have defined the PMDF_COMMENTS logical. If you specify */NOCOMMENTS*, then that logical will not be used and no Comments: line will be added to the header of the forwarded message. If, instead, you specify a comment with the */COMMENTS* qualifier, then that comment will be placed on a Comments: header line and PMDF_COMMENTS, if defined, will be ignored.

/CONFIRM
/NOCONFIRM (default)

When you specify */CONFIRM*, you must approve the inclusion of each selected message in the message digest. That is, for each message to be forwarded, you will be prompted. If you reply to the prompt in the affirmative, then the message will be included in the forwarded message digest; otherwise, it will be skipped.

/DELAY_WARNING (default)
/NODELAY_WARNING

The qualifier controls whether or not PMDF requests that delay notifications be sent in case this message is not delivered immediately. The default is that PMDF requests delay notifications. However, note that some remote mailers cannot support sender specification of whether delay notifications be sent and can unconditionally do one or the other regardless of whatever you request.

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FORWARD

/DELIVERY_RECEIPT[=keyword]
/NODELIVERY_RECEIPT

Normally, a Delivery-receipt-to: header line is generated only when you have defined the PMDF_DELIVERY_RECEIPT logical. If you specify /NODELIVERY_RECEIPT, then no Delivery-receipt-to: line will be generated. If, instead, you specify the /DELIVERY_RECEIPT qualifier, then a delivery receipt will be requested of all recipients of the forwarded message, and the PMDF_DELIVERY_RECEIPT logical, if defined, will be ignored. One of the keywords HEADER, NOTARY, or BOTH can optionally be specified to control what style of delivery receipt to construct (header style, NOTARY envelope style, or both, respectively).

/DIGEST=number[,...]
/NODIGEST (default)

Forward the specified messages. The messages will be encapsulated into a single MIME message digest. One or more messages can be specified via their message numbers. Ranges are permitted: /DIGEST=(1,3,6-9,15-20) specifies messages 1, 3, 6 through 9, and 15 through 20.

The /ALL qualifier has no effect when used in conjunction with /DIGEST. The /MARKED, /READ, and /REPLIED qualifiers further limit the messages forwarded. See the description of those qualifiers for further details

/EDIT[=option]
/NOEDIT (default)

To edit the message before forwarding it, specify the /EDIT qualifier. The /NOEDIT qualifier prevents an editor from being invoked. By default, an editor is only invoked if, when you ran PMDF MAIL, you specified the qualifier /EDIT=(FORWARD).

By default the message's RFC 822 header will also appear in the editor. To suppress the presentation of the RFC 822 header, specify /EDIT=NOHEADER. To request that the header appear in the editor, specify /EDIT=HEADER.

/ENCAPSULATE (default)
/NOENCAPSULATE

Specify whether or not to treat any input files specified with the optional **file-spec** parameter as separate attachments each encapsulated as a separate message body part.

/ENTIRE
/MESSAGE (default)
/PART

By default, when you forward a multipart or nested message, only the current message part is forwarded. This behavior is explicitly requested with the /MESSAGE qualifier. To forward to the entire message, specify /ENTIRE; to only forward the current part, use /PART.

When forwarding a single-part message which is not nested, the /ENTIRE, /PART, and /MESSAGE qualifiers are identical and have no effect.

/FAX_ROUTING=routing

When previewing a received FAX message, you can reroute it to its final destination with this command. See the section "Manual routing of inbound FAXes" in the PMDF-FAX chapter of the *PMDF System Manager's Guide* for information on the use of this qualifier. It is not intended for use by casual users and requires

PMDF MAIL commands

FORWARD

postmaster privileges to use. No other qualifiers can be specified in conjunction with the /FAX_ROUTING qualifier.

/FROM=address
/NOFROM

When you specify /NOFROM, the PMDF_FROM logical is ignored and a standard From: header line containing your address is generated. When you use /FROM, the specified address is used to construct the From: header line, and your real (authenticated) address is placed in a Sender: header line.

/INSERT
/NOINSERT

The /INSERT qualifier instructs PMDF MAIL to prompt you for additional message text and insert it as an attachment to the message. The additional text, which is composed by hand either through an editor or in response to the “Enter your message below” prompt, appears at the top of the message, with the forwarded message and any attached files appended afterwards.

/LAST
/NOLAST (default)

The /LAST qualifier causes the last message which you sent to be forwarded. /NOLAST selects the default behavior in which the last message read is forwarded.

/MARKED
/NOMARKED

Forward all currently selected messages which are marked. The messages will be forwarded as a message digest. /NOMARKED forwards only those messages which are not marked. When used in conjunction with /DIGEST, only those selected messages which are marked, or not marked, will be forwarded.

/MULTIPLE
/SINGLE (default)

By default, you are prompted only once for each type of recipient address, To:, Cc:, and Bcc:. If you specify /MULTIPLE, then you will be prompted repeatedly for each of these address types. For each type, the prompt will repeat until you enter a blank line. /SINGLE selects the default behavior.

/PERSONAL_NAME=name
/NOPERSONAL_NAME

The /PERSONAL_NAME and /NOPERSONAL_NAME qualifiers override the setting of the SET PERSONAL_NAME command. When you use the /PERSONAL_NAME qualifier, the specified name will be used in the personal name field of your return address. Specifying /NOPERSONAL_NAME prevents any personal name from appearing in your return address.

/PRIORITY=priority
/NOPRIORITY

Normally, a Priority: header line is generated only when you have defined the PMDF_PRIORITY logical. If you specify /NOPRIORITY, then no Priority: line will be generated. If, instead, you specify the /PRIORITY qualifier, then the supplied priority will be included in a Priority: header line. The legal priorities are: NO-PRIORITY, THIRD-CLASS, SECOND-CLASS, NON-URGENT, NORMAL, and URGENT. NO-PRIORITY is equivalent to /NOPRIORITY.

PMDF MAIL commands

FORWARD

/READ

/NOREAD

Forward all currently selected messages which have been read. The messages will be forwarded as a message digest. */NOREAD* forwards only those messages which have not yet been read. When used in conjunction with */DIGEST*, only those selected messages which have been read, or not read, will be forwarded.

/READ_RECEIPT

/NOREAD_RECEIPT

Normally, a Read-receipt-to: header line is generated only when you have defined the *PMDF_READ_RECEIPT* logical. If you specify */NOREAD_RECEIPT*, then no Read-receipt-to: line will be generated. If, instead, you specify the */READ_RECEIPT* qualifier, then a read receipt will be requested of all recipients of the forwarded message, and any address specified by the *PMDF_READ_RECEIPT* logical will be ignored.

/REMOVE

/NOREMOVE (default)

When */REMOVE* is specified, your address will be removed from the list of recipients even if you explicitly specified your address as a To:, Cc:, or Bcc: address list or have */COPY_SELF* enabled for forwarding. Your address will appear in the Cc: list if you specify */SELF*.

/REPLIED

/NOREPLIED

Forward all currently selected messages which have been replied to (answered). The messages will be forwarded as a message digest. */NOREPLIED* forwards only those messages which have not yet been replied to. When used in conjunction with */DIGEST*, only those selected messages which have been replied to, or not, will be forwarded.

/REPLY_TO=address

/NOREPLY_TO

Normally, a Reply-to: header line is generated only when you have defined the *PMDF_REPLY_TO* logical. If you specify */NOREPLY_TO*, then no Reply-to: line will be generated. If, instead, you specify the */REPLY_TO* qualifier, then the supplied address will be placed in a Reply-to: header line, and any *PMDF_REPLY_TO* logical ignored.

/RETURN_CONTENT (default)

/NORETURN_CONTENT

These qualifiers control whether return-of-content is requested for non-delivery reports.

/SELF

/NOSELF

The */SELF* and */NOSELF* qualifiers override the behavior of the *SET COPY_SELF* command. */SELF* causes a copy of the forwarded message to be sent to yourself; your address will appear in the Cc: header line. When */NOSELF* is specified, you will not receive a copy of the message unless you explicitly include your address in the To:, Cc:, or Bcc: address lists.

/SENSITIVITY=sensitivity
/NOSENSITIVITY

Normally, a Sensitivity: header line is generated only when you have defined the PMDF_SENSITIVITY logical. If you specify */NOSENSITIVITY*, then no Sensitivity: line will be generated. If, instead, you specify the */SENSITIVITY* qualifier, then the supplied sensitivity will be included in a Sensitivity: header line. The legal sensitivities are: NOT-SENSITIVE, PERSONAL, PRIVATE, and COMPANY-CONFIDENTIAL. NOT-SENSITIVE is equivalent to */NOSENSITIVITY*.

/SIGNATURE=signature-spec
/NOSIGNATURE

Normally, signature lines are appended to the end of your message only if the PMDF_SIGNATURE logical is defined. When you specify */NOSIGNATURE*, no signature lines are included in the forwarded message. When, however, you specify the */SIGNATURE* qualifier, then the specified signature is included in the forwarded message. If **signature-spec** begins with an at-sign, @, then the signature lines are copied from the file name following the at-sign; otherwise, **signature-spec** itself is appended to the end of the reply.

/SUBADDRESS=subaddress

Attaches a subaddress to your return address.

/SUBJECT=subject
/NOSUBJECT

By default, you will be prompted to supply a Subject: line. */NOSUBJECT* suppresses this prompt; no Subject: line will appear in the outer header of the forwarded message. To specify a subject on the FORWARD command line, use the */SUBJECT* qualifier.

/TO
/TO_LIST=address[,...]
/TO_PROMPT (default)
/NOTO_PROMPT

By default, you prompted for the To: addresses to which to forward the message. The */NOTO_PROMPT* qualifier suppresses this prompting. You can use the */TO_LIST* qualifier to specify one or more To: addresses in the FORWARD command line itself.

The */TO* qualifier is an abbreviation for */TO_PROMPT*.

/TRIM
/NOTRIM_HEADER

Controls whether or not headers are trimmed in forwarded messages.

/USER=username

Forward the message as though you are the specified user; that is, the From: address in the forwarded message will be that of the specified user. No Sender: header line is added.

Use of this qualifier requires either WORLD privilege or the PMDF_WORLD or PMDF_WORLD_username rightslist identifier.

PMDF MAIL commands

FORWARD

POSITIONAL QUALIFIERS

/BLOCK
/RECORD
/TEXT

The ***/BLOCK***, ***/RECORD***, and ***/TEXT*** positional qualifiers can only be used in conjunction with an input file specification. These qualifiers allow you to override the default file reading (access) mode which PMDF would otherwise use to read the input file.

Typically, PMDF uses ***/TEXT***.

/EIGHTBIT=option
/NOEIGHTBIT

Specify how to handle eight bit characters found in an input file (*i.e.*, characters for which the eighth bit is set). The available options are

HEXIFY	Replace each eight bit character with =XX where "XX" is the character's ordinal value expressed in hexadecimal.
LEAVE	Leave eight bit characters untouched. This is the default behavior.
REMOVE	Remove eight bit characters from the message; removed characters are not replaced with anything to indicate their removal or former presence.
REPLACE	Replace each eight bit character with a question mark, "?".
STRIP	Clear the eighth bit in each character of the message; <i>i.e.</i> , "strip" the eighth bit from eight bit characters.

The default behavior is ***/EIGHTBIT=LEAVE***. Use ***/NOEIGHTBIT*** or ***/EIGHTBIT=REMOVE*** to remove all eight bit characters from input files.

/ENCODING=encoding

The ***/ENCODING*** positional qualifier can only be used in conjunction with an input file specification. The ***/ENCODING*** qualifier allows you to override the default file encoding method which PMDF would otherwise use to encode the input file. The legal encoding types are: NONE, 8BIT, 7BIT, BASE32, BASE64, BASE85, BINHEX, BTOA, HEXADECEMIAL, OLD-BASE64 (for use with PMDF V4.0), PATHWORKS, QUOTED-PRINTABLE, UUENCODE, COMPRESSED-BASE64, and COMPRESSED-UUENCODE.

/FILENAME=name
/NOFILENAME (default)

The ***/FILENAME*** and ***/NOFILENAME*** positional can may only be used in conjunction with an input file specification. When an input file is attached as a separate message body part to the forwarded message, that part's Content-type: header line will, by default, omit the optional file name parameter. This default behavior is explicitly selected with the ***/NOFILENAME*** qualifier. When ***/FILENAME*** is specified, the name of the input file will be included in the Content-type: header line. If no value is specified on the ***/FILENAME*** qualifier, then the name of the input file is used.

EXAMPLES

In the following example, the user fresnel@example.com has received a message from rex@example.com. Fresnel then forwards this message, copying herself on the forward, to misha@example.com and beckett@example.com. Compare this example with that shown for the REDISTRIBUTE command.

EMAIL> **READ 2**

Message MAIL 2

18-FEB-2012 08:27:45.18

Date: Thu, 18 Feb 2012 08:27:45 PDT 1
From: rex@example.com
Subject: Mrochek
To: fresnel@example.com

Have any of you seen Mrochek recently?

EMAIL> **FORWARD/SELF 2**

To: misha@example.com, beckett@example.com 3

EMAIL>

New mail on node EXAMPLE from IN%"fresnel@example.com" 4

EMAIL> **READ/NEW**

Message NEWMAIL 1

18-FEB-2012 12:30:10.20

Date: Thu, 18 Feb 2012 12:30:10 PDT 5
From: fresnel@example.com 6
To: misha@example.com, beckett@example.com 7
Cc: fresnel@example.com 6

Message contains multiple parts. Press return to read the next part...

EMAIL> **return 8**

Date: Thu, 18 Feb 2012 08:27:45 PDT 9
From: rex@example.com
Subject: Mrochek
To: fresnel@example.com

Have any of you seen Mrochek recently?

EMAIL>

The following items of note are called out in the example above:

- 1 The header of the original message from rex@example.com.
- 2 The FORWARD/SELF command is issued.
- 3 The message is forwarded to misha@example.com and beckett@example.com.
- 4 Fresnel receives her copy of the forwarded message. This copy was requested by the /SELF qualifier in 2 .
- 5 The date and time at which the message was forwarded.
- 6 The address of the individual, Fresnel, who forwarded the message.
- 7 The recipients of the forwarded message. Since Fresnel was copied on the redistribution (/SELF), Fresnel's address also appears in the Cc: header line.
- 8 The message has an additional part (the forwarded message itself). Fresnel presses the return key to read this additional part.

PMDF MAIL commands
FORWARD

- 9 The original message which was forwarded.

HELP

Obtain help on the use of PMDF MAIL.

SYNTAX **HELP** *[topic]*

Command Qualifiers

None.

Defaults

None.

PARAMETERS

topic

Optional topic to obtain help on.

DESCRIPTION

The HELP command can be used to obtain information on PMDF MAIL commands. To obtain information on all of the PMDF MAIL commands, use the command

```
EMAIL> HELP
```

To obtain information on individual commands or topics use the command

```
EMAIL> HELP topic
```

where *topic* is the name of the command or topic of interest.

PMDF MAIL commands

LAST

LAST

Display the last message of those currently selected, or the last part or page of the current message.

SYNTAX

LAST

Qualifiers

/EDIT
/FILTER_CTRL
/MESSAGE
/PAGE
/PART
/PAUSE
/TRIM_HEADER

Defaults

/NOEDIT
/NOFILTER_CTRL
/MESSAGE
/MESSAGE
/MESSAGE
/PAUSE
/TRIM_HEADER

PARAMETERS

None.

DESCRIPTION

The LAST command displays the last message of those currently selected, /MESSAGE, or the last part, /PART, or page, /PAGE, of the current message.

QUALIFIERS

/EDIT***/NOEDIT (default)***

When /EDIT is specified, the editor will be invoked to display the message. This is the default when PMDF MAIL is invoked with the command PMDF MAIL/EDIT=(READ). /NOEDIT prevents the editor from being invoked.

/FILTER_CTRL***/NOFILTER_CTRL (default)***

When /FILTER_CTRL is specified, 7-bit and 8-bit control characters in messages are filtered out. Messages which contain such control characters can cause problems with the terminal when they are displayed. When /FILTER_CTRL is specified, such a character is displayed as its hexadecimal value in the format "=XX".

/ENTIRE***/MESSAGE (default)******/PAGE***

/PART

Display the last message of those currently selected, */MESSAGE* or */ENTIRE*, or the last part, */PART*, or page, */PAGE*, of the current message.

The */PAGE* qualifier is treated as */PART* when the editor is invoked to display the message. When the current message is a single-part message, the commands *LAST/PART* and *CURRENT/MESSAGE* are equivalent.

/PAUSE (default)***/NOPAUSE***

When displaying the message, after a page of information has been output PMDF MAIL pauses and requests that you press if you want to continue reading. To suppress these prompts, specify */NOPAUSE*.

/TRIM_HEADER (default)***/NOTRIM_HEADER***

When */NOTRIM_HEADER* is specified, all header lines in the message will appear when the header is next displayed. By default, message header lines are trimmed; this behavior is explicitly requested with the */TRIM_HEADER* qualifier.

PMDF MAIL commands

MAIL

MAIL

Send a mail message.

SYNTAX **MAIL** *[file-spec[,...]]*

PARAMETERS

file-spec[,...]

Optional list of one or more files to send. If /INSERT is specified, then these files will be sent as attachments to a message which you input from the keyboard.

DESCRIPTION

The MAIL command is identical to the SEND command. For information on the use of the MAIL command, consult the description of the SEND command.

MARK

Clear the mark or change its new vs. read or unreplied vs. replied status.

SYNTAX **MARK** [*message-number*[,...]]

Qualifiers	Defaults
/ALL	None
/READ	None
/REPLIED	None

PARAMETERS

***message-number*[,...]**

Optional list of integers specifying which messages to mark. Ranges are permitted (e.g., 5-7).

DESCRIPTION

The MARK command sets a flag which labels the specified messages as being “marked”. In directory listings, marked messages appear with an asterisk, *, in the left hand column of the listing. These marks can then serve as a reminder to you; they will remain until the messages are either deleted or the marks cleared with the UNMARK command.

If the optional **message-number** parameter is omitted, then only the last message read will be marked. When the /ALL qualifier is specified, all currently selected messages are marked.

The /READ, /NOREAD, /REPLIED, and /NOREPLIED qualifiers can be used to change the read vs. unread and replied vs. unreplied status of a message. New messages are flagged as being read after you read them, and flagged as being replied after your reply to them. These flags only appear when you use the DIRECTORY/FULL command.

The COPY, MOVE, DELETE, and SELECT commands can all be directed to only operate on marked, unmarked, read, unread (new), replied (answered), or unreplied (unanswered) messages.

PMDf MAIL commands

MARK

QUALIFIERS

/ALL

Mark all currently selected messages.

/READ

/NOREAD

Mark the specified messages as being read, /READ, or unread, /NOREAD.

/REPLIED

/NOREPLIED

Mark the specified messages as having been replied to, /REPLIED, or as having not been replied to, /NOREPLIED.

EXAMPLES

1 EMAIL> DIRECTORY

#	From	Date	Subject	MAIL
1	BOB@EXAMPLE.COM	18-JAN-2012	This and that	
2	dn0u@sc.cs.cmu.ed	18-JAN-2012	Grant proposals due 1/29/93	
3	tch@doof.city.com	19-JAN-2012	Que Pasa amigo	

EMAIL> MARK 2

EMAIL> DIRECTORY

#	From	Date	Subject	MAIL
1	BOB@EXAMPLE.COM	18-JAN-2012	This and that	
*2	dn0u@sc.cs.cmu.ed	18-JAN-2012	Grant proposals due 1/29/93	
3	tch@doof.city.com	19-JAN-2012	Que Pasa amigo	

EMAIL>

In this example, the second message of those currently selected is marked with the MARK command. This mark appears as an asterisk, *, in the second directory listing.

2 EMAIL> READ 2

.
.
.

EMAIL> MARK/NOREAD

EMAIL> MOVE NEWMAIL

In this example, a message is read and then, after reading, marked as being new (*i.e.*, unread) and moved to the NEWMAIL folder where it will appear with other new messages. Doing this comes in handy when you read a message which you want to forestall acting upon: this way the message will again appear as a new message the next time you check your mail.

MOVE

Move one or more mail messages to another folder.

SYNTAX **MOVE** *folder-name* [*file-spec*]

Qualifiers	Defaults
<i>/ALL</i>	<i>None</i>
<i>/CONFIRM</i>	<i>See text</i>
<i>/MARKED</i>	<i>None</i>
<i>/MESSAGES=number</i>	<i>None</i>
<i>/READ</i>	<i>None</i>
<i>/REPLIED</i>	<i>None</i>

PARAMETERS

folder-name

Required parameter specifying the name of the folder to which to move the messages. The folder need not already exist.

file-spec

Optional parameter specifying the name of the mail file containing the specified folder. The mail file need not already exist.

DESCRIPTION

The MOVE command moves the specified messages to another folder. Unlike the COPY command, the messages are removed from the current folder in the process of moving them. The messages to be moved are selected with the /ALL, /MARKED, and /NOMARKED, /READ, /NOREAD, /REPLIED, and /NOREPLIED qualifiers. These qualifiers can be combined as demonstrated in the supplied example. If none of these qualifiers are specified then only the last message read will be copied.

The messages are moved into the specified folder. If that folder does not already exist, then you will be asked whether or not it should be created. If you answer in the negative, then the move operation will be canceled. To specify a folder in a different mail file, specify that file's name with the optional **file-spec** parameter. If that mail file does not exist, then you will be asked whether or not it should be created. If you omit the **file-spec** parameter, then the folder is assumed to be in the current mail file.

Use the COPY command if you want to move messages to another folder without deleting them from the current folder in the process. Use the EXTRACT command to extract messages to an ordinary text file.

PMDf MAIL commands

MOVE

QUALIFIERS

/ALL

Move all currently selected messages. Cannot be used in conjunction with /MESSAGES.

/CONFIRM

/NOCONFIRM

When neither /CONFIRM or /NOCONFIRM is specified, you will only be prompted to confirm file or folder creations should the specified file or folder not exist. When /CONFIRM is specified, you will be prompted to confirm each message move as well as the creation of files or folders. /NOCONFIRM specifies that all prompting is to be suppressed; any file or folder will be created if necessary and all selected messages moved.

/MARKED

/NOMARKED

Move all currently selected messages which have been previously marked, /MARK, or are not marked, /NOMARK.

/MESSAGES=(number[,...])

Specifies the identification number or numbers of the messages to be moved. Cannot be used in conjunction with /ALL.

/READ

/NOREAD

Move all currently selected messages which have been previously read, /READ, or are unread, /NOREAD.

/REPLIED

/NOREPLIED

Move all currently selected messages which have been replied to, /REPLIED, or have not been replied to, /NOREPLIED.

EXAMPLES

1 EMAIL> SET FOLDER MAIL
EMAIL> MOVE/MARKED/REPLIED MAIL_93
Folder MAIL_93 does not exist.
Do you want to create it (Y/N, default is N)? Y
%MAIL-I-NEWFOLDER, folder MAIL_93 created
EMAIL>

In the following example, the MOVE/MARKED/REPLIED command is used to move to the MAIL_93 folder all messages which have been both replied to and marked with the MARK command.

2 EMAIL> MOVE/MESSAGES=(1,5-8,10) MAIL_93
EMAIL>

In this example, messages 1, 5, 6, 7, 8, and 10 are moved to the folder MAIL_93.

NEXT

Display the next message, message part, or message page.

SYNTAX

NEXT

Qualifiers	Defaults
<i>/EDIT</i>	<i>/NOEDIT</i>
<i>/FILTER_CTRL</i>	<i>/NOFILTER_CTRL</i>
<i>/MESSAGE</i>	<i>/MESSAGE</i>
<i>/PAGE</i>	<i>/MESSAGE</i>
<i>/PART</i>	<i>/MESSAGE</i>
<i>/PAUSE</i>	<i>/PAUSE</i>
<i>/TRIM_HEADER</i>	<i>/TRIM_HEADER</i>

PARAMETERS

None.

DESCRIPTION

The NEXT command displays the next message, */MESSAGE*, the next part of a multipart message, */PART*, or the next page of the current message, */PAGE*.

QUALIFIERS

/EDIT

/NOEDIT (default)

When */EDIT* is specified, the editor will be invoked to display the message. This is the default when PMDF MAIL is invoked with the command PMDF MAIL/*EDIT*=(*READ*). */NOEDIT* prevents the editor from being invoked.

/FILTER_CTRL

/NOFILTER_CTRL (default)

When */FILTER_CTRL* is specified, 7-bit and 8-bit control characters in messages are filtered out. Messages which contain such control characters can cause problems with the terminal when they are displayed. When */FILTER_CTRL* is specified, such a character is displayed as its hexadecimal value in the format "*=XX*".

/ENTIRE

/MESSAGE (default)

/PAGE

PMDF MAIL commands

NEXT

/PART

Display the next message, */MESSAGE* or */ENTIRE*, the next part of a multipart message, */PART*, or the next page of the current message, */PAGE*.

The */PAGE* qualifier is treated as */PART* when the editor is invoked to display the message. When the current message is a single-part message, the commands *NEXT/PART* and *NEXT/MESSAGE* are equivalent.

/PAUSE (default)

/NOPAUSE

When displaying the message, after a page of information has been output PMDF MAIL pauses and requests that you press if you want to continue reading. To suppress these prompts, specify */NOPAUSE*.

/TRIM_HEADER (default)

/NOTRIM_HEADER

When */NOTRIM_HEADER* is specified, all header lines in the message will appear when the header is next displayed. By default, message header lines are trimmed; this behavior is explicitly requested with the */TRIM_HEADER* qualifier.

PLAY

Play an audio file.

SYNTAX **PLAY** *audio-file-spec*

Qualifiers	Defaults
<i>/AUDIO_DEVICE=device</i>	See text
<i>/SPEAKER=speaker</i>	See text
<i>/SOUND_LEVEL=level</i>	See text

PARAMETERS

audio-file-spec

Required parameter specifying the name of the input file to play.

DESCRIPTION

Audio files can be played with the PLAY command. Either HP DIVA or raw 8 bit ISDN μ -law files can be played. The former format is that produced by the Motif DECsound tool while the latter format is used by most UNIX platforms and is that specified by the MIME audio/basic content type. The play command requires that you be running PMDF MAIL on a workstation with an output audio device such as a VAXstation 4000 or an Alpha with _SOA0: devices. For DIVA files, a subprocess is spawned to run the CDA viewer; play the file by pressing the speaker button in the upper left corner of the viewer window; exit the viewer through the FILE menu in the menu bar of the viewer window. For μ -law files, the raw data from the file is written directly to the SOA0: device. You can abort the playback by typing CTRL/C.

QUALIFIERS

/AUDIO_DEVICE=device

Specify which output audio device to use. If not specified, then the device specification from the user's profile is used. If no profile setting has been made, then the _SOA0: device is used.

/SPEAKER=speaker

Specify which speaker to use, INTERNAL or EXTERNAL. If you do not specify a speaker, then the speaker selected with the SET SPEAKER command will be used. If you have never used the SET SPEAKER command, then the internal speaker will be used.⁴ This qualifier has no effect when a HP DIVA file is played.

⁴ Owing to manufacturing defects and/or oversights, the internal speaker does not work on many VAXstation 4000/60 workstations.

PMDf MAIL commands

PLAY

/SOUND_LEVEL=level

Specify the playback sound level, an integer percentage ranging from 0 to 100. If you do not specify a sound level, then the level selected with the SET SOUND_LEVEL command will be used. If you have never used that command, then a sound level of 60% will be used. This qualifier has no effect when a HP DIVA file is played.

EXAMPLES

1 EMAIL> PLAY DECW\$EXAMPLES:AUTO-SQUEAL.AUD
[Playing the audio file with the CDA Viewer.]
EMAIL>

In this example, the HP supplied sample DIVA file AUTO-SQUEAL.AUD is played on the external speaker.

2 EMAIL> RECORD JOKE.AU
Press any key to begin recording. Press CTRL/Z when done, CTRL/C to cancel:
Recording...
[CTRL/Z]
%EMAIL-I-RECORDED, 96256 bytes recorded (11.75 seconds) to D1:[BOB]JOKE.AU;1
EMAIL> PLAY/SPEAKER=EXTERNAL JOKE.AU
Playing the file D1:[BOB]JOKE.AU;1
Press CTRL/C to cancel playback
EMAIL> SEND/INSERT JOKE.AU
To: MROCHEK
Subject: A funny joke
Enter your message below. Press CTRL/Z when complete, CTRL/C to quit:
Mrocheck,
Here's a joke I heard from Beckett.
[CTRL/Z]
EMAIL> SPAWN DELETE JOKE.AU
%DELETE-I-FILDEL, D1:[BOB]JOKE.AU;1 deleted (188 blocks)
EMAIL>

In this example, the RECORD command is used to record an audio file which is then played back through the external speaker. After playing the file back, it is sent as an attachment to a mail message. Finally, the audio file is deleted.

PRINT

Print a mail message.

SYNTAX

PRINT

Qualifiers	Defaults
<i>/AFTER</i>	<i>/NOAFTER</i>
<i>/ALL</i>	<i>/NOALL</i>
<i>/BURST</i>	<i>/NOBURST</i>
<i>/CANCEL</i>	<i>/NOCANCEL</i>
<i>/CONFIRM</i>	<i>/NOCONFIRM</i>
<i>/COPIES=n</i>	<i>/NOCOPIES</i>
<i>/DIGEST</i>	<i>/NODIGEST</i>
<i>/ENTIRE</i>	<i>/PART</i>
<i>/FEED</i>	<i>/FEED</i>
<i>/FLAG</i>	<i>/NOFLAG</i>
<i>/FORM=form-name</i>	See text
<i>/HEADER</i>	<i>/HEADER</i>
<i>/HOLD</i>	<i>/NOHOLD</i>
<i>/LOG</i>	<i>/LOG</i>
<i>/MARKED</i>	None
<i>/MESSAGE</i>	<i>/PART</i>
<i>/NAME=job-name</i>	None
<i>/NOTIFY</i>	<i>/NONOTIFY</i>
<i>/NOW</i>	<i>/NONOW</i>
<i>/PARAMETERS=(P1[,...])</i>	<i>/NOPARAMETERS</i>
<i>/PART</i>	<i>/PART</i>
<i>/PRINT</i>	<i>/NOPRINT</i>
<i>/READ</i>	None
<i>/REPLIED</i>	None
<i>/QUEUE=queue-name</i>	See text
<i>/SETUP</i>	<i>/NOSETUP</i>
<i>/SPACE</i>	<i>/NOSPACE</i>
<i>/TERMINAL</i>	None
<i>/TRAILER</i>	<i>/NOTRAILER</i>
<i>/TRIM_HEADER</i>	<i>/NOTRIM_HEADER</i>

PARAMETERS

None.

DESCRIPTION

The PRINT command prints a copy of the message you are currently reading. Messages printed with the PRINT command do not actually begin printing until you either exit PMDF MAIL or issue the PRINT/NOW command. This allows multiple print requests to be concatenated together into one print job.

PMDf MAIL commands

PRINT

When the PRINT command is issued, the last message read is printed. If that message is a multipart message, then only the last read part of that message is actually printed. Use the /ENTIRE qualifier to print the entire message and not just a part of it.

QUALIFIERS

/AFTER=time

/NOAFTER (default)

Print the message after the specified time.

/ALL

/NOALL (default)

Print all currently selected messages. Messages will be printed as a message digest.

/BURST=ALL

/BURST=ONE

/NOBURST (default)

Controls whether a burst page is printed. /BURST=ALL requests that a burst page separate each print request generated by the PRINT command; /BURST=ONE requests that only one burst page be printed preceding the first message printed. By default, no burst pages are printed.

When used in conjunction with /TERMINAL, form feeds will be output after each message.

/CANCEL

/NOCANCEL (default)

/CANCEL cancels any outstanding print requests.

/CONFIRM

/NOCONFIRM (default)

When you specify /CONFIRM, you must approve the printing of each message. That is, for each message to be printed, you will be prompted. If you reply to the prompt in the affirmative, then the message will be printed; otherwise, it will be skipped.

/COPIES=n

/NOCOPIES (default)

Controls the number of copies printed. By default, only one copy is printed.

/DIGEST

/NODIGEST (default)

When /DIGEST is specified, multiple messages output to a file will be formatted as a MIME message/digest.

/ENTIRE

/MESSAGE

/PART (default)

By default, when you print a multipart or nested message, only the current part is printed. This behavior is explicitly requested with the /PART qualifier. To print

the entire message, specify **/ENTIRE**; to only print the current part identifiable as a message, specify **/MESSAGE**.

When printing a single-part message which is not nested, the **/ENTIRE**, **/PART**, and **/MESSAGE** qualifiers are identical and have no effect. **/ENTIRE** is assumed when **/ALL** is specified; **/MESSAGE** and **/PART** have no effect in that case.

/FEED (default)

/NOFEED

Controls whether the print system paginates the output by inserting a form feed at the end of each page of output.

/FLAG=ALL

/FLAG=ONE

/NOFLAG (default)

Controls whether a flag page is printed. **/FLAG=ALL** requests that a flag page separate each print request generated by the **PRINT** command; **/FLAG=ONE** requests that only one flag page be printed preceding the first message printed. By default, no flag pages are printed.

/FORM=form-name

/NOFORM

By default, the form specified with the **SET FORM** command is used as the print form. If you have never used that command or have issued the **SET NOFORM** command, then the default print form associated with the printer queue is used.

The **/FORM** and **/NOFORM** commands override the **SET FORM** command. The **/FORM** qualifier requests a specific print form; **/NOFORM** requests that no print form be used.

/HEADER (default)

/NOHEADER

By default, when the message is printed its header is included. Specify **/NOHEADER** to omit the message header.

/HOLD

/NOHOLD (default)

Controls whether the message is available for immediate printing. When you specify **/HOLD**, the print job is not released for actual printing until you use the DCL command **SET QUEUE/ENTRY/RELEASE** to release it.

/LOG (default)

/NOLOG

For each message file created for printing purposes, output to the terminal a status message. To suppress this information, use the **/NOLOG** qualifier.

/MARKED

/NOMARKED

Print only messages that have been marked, **/MARKED**, or are not marked, **/NOMARKED**.

/NAME=job-name

Specify a job name to associate with the print job.

PMDF MAIL commands

PRINT

/NOTIFY

/NONOTIFY (default)

When you specify */NOTIFY*, you will be notified by a broadcast message when your messages have finished printing.

/NOW

/NONOW (default)

/PRINT

/NOPRINT

Close the currently open print job so that the queued messages will begin printing. That is, release all messages previously queued with the *PRINT* command so that they will begin printing immediately. If you do not specify */NOW* or */PRINT*, then your messages will not begin printing until after you exit PMDF MAIL. The only other qualifier which you can use with */NOW* or */PRINT* is */NOTIFY*.

/PRINT and */NOW* are synonymous.

/PARAMETERS=(P1[,...])

Specify up to eight parameters to be associated with the print job.

/QUEUE=queue-name

/NOQUEUE

By default, the print jobs are queued to the queue specified with the *SET QUEUE* command. If you have never used that command or have issued the *SET NOQUEUE* command, then *SYSSPRINT* will be used.

The */QUEUE* and */NOQUEUE* commands override the *SET QUEUE* command. The */QUEUE* qualifier requests a specific print queue; */NOQUEUE* requests that the default queue, *SYSSPRINT* be used.

/READ

/NOREAD

Print all currently selected messages which have been previously read, */READ*, or are unread, */NOREAD*.

/REPLIED

/NOREPLIED

Print all currently selected messages which have been replied to, */REPLIED*, or have not been replied to, */NOREPLIED*.

/SETUP=(module[,...])

/NOSETUP (default)

Specify one or more text modules to extract from the device control library and down load to the printer prior to printing the message.

/SPACE

/NOSPACE (default)

When */SPACE* is specified the printed output will be double spaced. By default, */NOSPACE*, the output is printed single spaced.

/TERMINAL[=PRINTER_PORT]

Print the selected messages to the terminal. Cannot be used in conjunction with any of the print queue related qualifiers (*e.g.*, /AFTER, /PARAMETER, /NOTIFY, /TRAILER, *etc.*).

When the optional PRINTER_PORT value is specified, the printer port will be activated prior to printing and deactivated upon completion of printing. This feature will only work with terminals supported by the SMGS run time library. When used in conjunction with a DECterm window, the output will be handled in accord with the selected printing options for that DECterm window.

/TRAILER=ALL

/TRAILER=ONE

/NOTRAILER (default)

Controls whether a trailer page is printed. /TRAILER=ALL requests that a trailer page separate each print request generated by the PRINT command; /TRAILER=ONE requests that only one trailer page be printed after the final message printed. By default, no trailer pages are printed.

/TRIM_HEADER

/NOTRIM_HEADER (default)

By default, the full message header appears in each printed message. Use the /TRIM_HEADER qualifier to apply header trimming to each message prior to printing it.

EXAMPLES

```

1 EMAIL> READ
Message MAIL 1                                     2-FEB-2012 12:13:18.01
Date: Tue, 2 Feb 2012 12:13:18 PDT
From: bob@example.com
To: staff@example.com
Subject: Vacation schedule
    .
    .
    .
EMAIL> PRINT
EMAIL> EXIT
Job MAIL_01GV5A_PRINT (queue SYS$PRINT, entry 612) started on SYS$PRINT
$
    
```

In this example a message is printed to the default print queue, SYS\$PRINT. The message begins printing when PMDF MAIL is exited.

PMDf MAIL commands

PRINT

```
2 EMAIL> READ
Message MAIL 1                                2-FEB-2012 12:13:18.01
Date: Tue, 2 Feb 2012 12:13:18 PDT
From: bob@example.com
To: staff@example.com
Subject: Vacation schedule
.
.
.
EMAIL> PRINT/QUEUE=PS_PRT
EMAIL> PRINT/NOW
Job MAIL_01GZ7C_PRINT (queue PS_PRT, entry 613) started on PS_PRT
$
```

Here, the /QUEUE qualifier is used to specify a print queue other than the default print queue. In the second PRINT command, the /NOW causes the messages to begin printing.

PURGE

Deletes all messages in the wastebasket folder.

SYNTAX

PURGE

Qualifiers

/RECLAIM
/STATISTICS

Defaults

/NORECLAIM
/NOSTATISTICS

PARAMETERS

None.

DESCRIPTION

The PURGE command irrevocably deletes all messages from the wastebasket folder of the currently open mail file. If no mail file is open, then your default mail file is opened and its wastebasket purged.

Purged message space is not available for reuse until a reclaim operation is performed. When the amount of deleted message space in the mail file exceeds 32,767 bytes, a reclaim operation is automatically done by the PURGE command. You can explicitly request a reclaim operation with the */RECLAIM* qualifier. Note that when a reclaim operation is performed on your default mail file, you cannot receive new mail messages until the operation completes.

You can use the SHOW DELETED command to show the amount of unreclaimed, deleted message space in the current mail file.

An implicit PURGE command is done when you exit from PMDF MAIL with the EXIT command and the last opened mail file was your default mail file. To prevent a purge from occurring, either exit with the QUIT command or issue the command SET NOAUTO_PURGE. The effect of that SET command will be remembered even after you exit PMDF MAIL.

QUALIFIERS

/RECLAIM

/NORECLAIM (default)

Reclaim deleted message space. While purging your default mail file with PURGE/RECLAIM, you will not be able to receive new mail.

/STATISTICS

/NOSTATISTICS (default)

Produce a simple report detailing the results of the purge and any reclamation.

PMDf MAIL commands

PURGE

EXAMPLES

In the following example, the PURGE/RECLAIM/STATISTICS command is used to delete the messages from the wastebasket folder. The amount of deleted message space before and after the purge operation is displayed with the SHOW DELETED command.

```
EMAIL> SHOW DELETED
Mail file D1:[BOB]MAIL.MAI;1
    contains 14125 deleted message bytes.
EMAIL> PURGE/RECLAIM/STATISTICS
%EMAIL-I-RECLPLSWAIT, reclaiming deleted file space.  Please wait...
Reclaim statistics:
    Messages deleted:          15
    Data buckets scanned:     18
    Data buckets reclaimed:   13
    Index buckets reclaimed:   0
    Total buckets reclaimed:  13
EMAIL> SHOW DELETED
Mail file D1:[BOB]MAIL.MAI;1
    contains 0 deleted message bytes.
EMAIL>
```

QUIT

Exit from PMDF MAIL without purging the wastebasket.

SYNTAX

QUIT

Command Qualifiers	Defaults
---------------------------	-----------------

None.

None.

PARAMETERS

None.

DESCRIPTION

The QUIT command exits you from PMDF MAIL. Unlike the EXIT command, the wastebasket folder will not be purged upon exiting.

PMDf MAIL commands

READ

READ

Display a mail message.

SYNTAX

READ [*folder-name*] [*message-number*]

Qualifiers	Defaults
<i>/BEFORE=date</i>	<i>None</i>
<i>/CC_SUBSTRING=text</i>	<i>None</i>
<i>/EDIT</i>	<i>/NOEDIT</i>
<i>/FILTER_CTRL</i>	<i>/NOFILTER_CTRL</i>
<i>/FROM_SUBSTRING=text</i>	<i>None</i>
<i>/MARKED</i>	<i>None</i>
<i>/MIME</i>	<i>/MIME</i>
<i>/NEW</i>	<i>None</i>
<i>/PAUSE</i>	<i>/PAUSE</i>
<i>/REPLIED</i>	<i>None</i>
<i>/SINCE=date</i>	<i>None</i>
<i>/SUBJECT_SUBSTRING=text</i>	<i>None</i>
<i>/TO_SUBSTRING=text</i>	<i>None</i>
<i>/TRIM_HEADER</i>	<i>/TRIM_HEADER</i>

PARAMETERS

folder-name

Optional parameter specifying the name of the folder to select messages from.

message-number

Optional parameter specifying the particular message to display.

DESCRIPTION

Use the READ command to display your mail messages.

The **folder-name** and **message-number** parameters are optional. If you omit them, then the next message from those currently selected is displayed. If no messages are currently selected, then new messages from the NEWMAIL folder are displayed. If the NEWMAIL folder does not exist, messages from the MAIL folder are displayed.

The message number parameter specifies a particular message to display. The correspondence between message numbers and messages is shown with the DIRECTORY command.

The BACK, NEXT, FIRST, LAST, and CURRENT commands may also be used to display messages. Shown below are brief descriptions of these commands and further effects which may be had by using them in conjunction with the /PAGE or /PART qualifiers.

BACK, NEXT	Display the previous or next message
FIRST, LAST	Display the first or last message
CURRENT	Redisplay the current message
BACK/PAGE	Redisplay the last page of the message
CURRENT/PAGE	Redisplay the current page of the message
LAST/PAGE	Display the end of the message
NEXT/PART	Skip to the next part of a multipart message
CURRENT/NOTRIM	Redisplay the current message with all of its header lines

QUALIFIERS

/BEFORE[=date]

Select messages dated before the specified date. All the messages received before the current day are selected if no date is specified.

/CC_SUBSTRING=text

Select messages containing **text** in the VMS MAIL Cc: header line of the message.

/EDIT

/NOEDIT (default)

When /EDIT is specified, the editor will be invoked to display the message. This is the default when PMDF MAIL is invoked with the command PMDF MAIL/EDIT=(READ). /NOEDIT prevents the editor from being invoked.

/FILTER_CTRL

/NOFILTER_CTRL (default)

When /FILTER_CTRL is specified, 7-bit and 8-bit control characters in messages are filtered out. Messages which contain such control characters can cause problems with the terminal when they are displayed. When /FILTER_CTRL is specified, such a character is displayed as its hexadecimal value in the format "=XX".

/FROM_SUBSTRING=text

Select messages containing **text** in the VMS MAIL From: header line of the message.

/MARKED

/NOMARKED

Select messages that have been marked, /MARKED, or are not marked, /NOMARKED.

/MIME (default)

/NOMIME

Specify whether or not to interpret a message as a MIME message.

PMDF MAIL commands

READ

/NEW

Select new (unread) messages from the NEWMAIL folder of your default mail file, MAIL.MAI. If any other mail file is open, it is closed and the default mail file opened.

/PAUSE (default)

/NOPAUSE

When displaying the message, after a page of information has been output PMDF MAIL pauses and requests that you press `[RETURN]` if you want to continue reading. To suppress these prompts, specify `/NOPAUSE`.

/REPLIED

/NOREPLIED

Select messages that have been replied to, `/REPLIED`, or have not been replied to, `/NOREPLIED`.

/SINCE[=date]

Select messages dated since the specified date. All the messages received on the current day are selected if no date is specified.

/SUBJECT_SUBSTRING=text

Select messages containing **text** in the VMS MAIL Subject: header line of the message.

/TO_SUBSTRING=text

Select messages containing **text** in the VMS MAIL To: header line of the message.

/TRIM_HEADER (default)

/NOTRIM_HEADER

When `/NOTRIM_HEADER` is specified, all header lines in the message will be displayed. By default, message header lines are trimmed; this behavior is explicitly requested with the `/TRIM_HEADER` qualifier.

EXAMPLES

1 \$ PMDF MAIL

You have 2 new messages.

EMAIL> READ

Message NEWMAIL 1

18-FEB-2012 08:27:45.18

Date: Thu, 18 Feb 2012 08:27:45 PDT

From: rex@example.com

Subject: Mrochek

To: fresnel@example.com

Have any of you seen Mrochek recently?

EMAIL>

In this example, the READ command is used upon entering PMDF MAIL. This causes the first new mail message to be displayed. A subsequent READ or NEXT command will then cause the next new mail message to be displayed. Simply entering a `[RETURN]` will have the same effect.

2 EMAIL> **READ/SINCE=1-FEB-2012**

Message MAIL 1

2-FEB-2012 12:13:18.01

Date: Tue, 2 Feb 2012 12:13:18 PDT

From: bob@example.com

To: staff@example.com

Subject: Vacation schedule

.

.

.

EMAIL>

Here, messages received on or since 1-FEB-2012 are selected for reading. The first message meeting this criterion is displayed.

RECORD

Record an audio file.

SYNTAX **RECORD** *audio-file-spec*

Qualifiers	Defaults
<i>/AUDIO_DEVICE=device</i>	<i>See text</i>
<i>/SPEAKER=speaker</i>	<i>/SPEAKER=EXTERNAL</i>

PARAMETERS

audio-file-spec

Required parameter specifying the name of the output file to store the audio data in.

DESCRIPTION

With the RECORD command, you can record audio data to an external file. This requires a workstation with an audio input device such as a VAXstation 4000 or an Alpha with _SOA0: devices. The raw data from the device, which is in 8 bit ISDN μ -law format, is output directly to the file and can be replayed with the PLAY command or included in mail messages which you send. The output file has no attributes and fixed length, 512 byte records; it is compatible with the MIME audio/basic content type and with the audio files used on most UNIX platforms. It is not, however, the same as a HP DIVA file. Use the Motif DECsound tool if you want to create DIVA files.

When recording data, press CTRL/Z to end the recording or CTRL/C to cancel the recording.

QUALIFIERS

/AUDIO_DEVICE=device

Specify which input audio device to use. If not specified, then the device specification from the user's profile is used. If no profile setting has been made, then the _SOA0: device is used.

/SPEAKER=speaker

Specify which speaker to use, INTERNAL or EXTERNAL. If you do not select a speaker, then the external speaker will be used.

EXAMPLES

In the following example, audio data is recorded to the file JOKE.AU. The data in that file is then played back with the PLAY command and finally mailed as an attachment to a message.

EMAIL> **RECORD JOKE.AU**

Press any key to begin recording. Press CTRL/Z when done, or CTRL/C to cancel:

Recording...

CTRL/Z

%EMAIL-I-RECORDED, 96256 bytes recorded (11.75 seconds) to D1:[BOB]JOKE.AU;1

EMAIL> **PLAY JOKE.AU**

Playing the file D1:[BOB]JOKE.AU;1

Press CTRL/C to cancel playback

EMAIL> **SEND/INSERT JOKE.AU**

To: **MROCHEK**

Subject: **A funny joke**

Enter your message below. Press CTRL/Z when complete, or CTRL/C to quit:

Mrocheck,

Here's a joke I heard from Beckett.

CTRL/Z

EMAIL> **SPAWN DELETE JOKE.AU**

%DELETE-I-FILDEL, D1:[BOB]JOKE.AU;1 deleted (188 blocks)

EMAIL>

PMDF MAIL commands

REDISTRIBUTE

REDISTRIBUTE

Redistribute a message.

SYNTAX

REDISTRIBUTE

Qualifiers	Defaults
<i>/ABORT</i>	<i>See text</i>
<i>/BCC</i>	<i>/NOBCC_PROMPT</i>
<i>/BCC_LIST=address</i>	<i>None</i>
<i>/BCC_PROMPT</i>	<i>/NOBCC_PROMPT</i>
<i>/CC</i>	<i>See text</i>
<i>/CC_LIST=address</i>	<i>None</i>
<i>/CC_PROMPT</i>	<i>See text</i>
<i>/DELAY_WARNING</i>	<i>/DELAY_WARNING</i>
<i>/DELIVERY_RECEIPT</i>	<i>See text</i>
<i>/FROM=address</i>	<i>/NOFROM</i>
<i>/IGNORE</i>	<i>See text</i>
<i>/MULTIPLE</i>	<i>/SINGLE</i>
<i>/PERSONAL_NAME=name</i>	<i>See text</i>
<i>/PRIORITY=priority</i>	<i>See text</i>
<i>/READ_RECEIPT</i>	<i>See text</i>
<i>/REMOVE</i>	<i>/NOREMOVE</i>
<i>/RETURN_CONTENT</i>	<i>/RETURN_CONTENT</i>
<i>/SELF</i>	<i>See text</i>
<i>/SENSITIVITY=sensitivity</i>	<i>See text</i>
<i>/SINGLE</i>	<i>/SINGLE</i>
<i>/SUBADDRESS</i>	<i>None</i>
<i>/TO</i>	<i>/TO_PROMPT</i>
<i>/TO_LIST=address</i>	<i>None</i>
<i>/TO_PROMPT</i>	<i>/TO_PROMPT</i>
<i>/USER=username</i>	<i>None</i>

PARAMETERS

None.

DESCRIPTION

Either the REDISTRIBUTE or FORWARD command may be used to forward a message to other individuals. However, unlike the FORWARD command which affords you the opportunity to modify the message prior to actually forwarding it, the REDISTRIBUTE command does not allow you to modify or change the message. There is, however, an advantage to this: it allows the message to be forwarded such that a recipient of it will see in the From:, Date:, To:, Cc:, and Bcc: header lines who originally sent the message, when they originally sent it, and to whom. Your address, when you redistributed the message, and who you

redistributed it to will appear in Resent-From:, Resent-Date:, Resent-To:, Resent-Cc:, and Resent-Bcc: header lines. Moreover, the message will not be encapsulated the way it is by the FORWARD command.

QUALIFIERS

/ABORT

/IGNORE

The ***/ABORT*** qualifier causes the message redistribution to fail if any of the Resent-To:, Resent-Cc:, or Resent-Bcc: addresses prove to be illegal. The ***/IGNORE*** qualifier permits the redistribution to be sent provided that at least one of the addresses is legal. The illegal addresses are ignored and will not appear in the message's header. The default behavior, if neither ***/ABORT*** or ***/IGNORE*** is specified, is to prompt you when any of the addresses is illegal. You will be given the choice of whether to cancel the redistribution or to go ahead and redistribute the message to only the legal addresses.

/BCC

/BCC_LIST=address[,...]

/BCC_PROMPT

/NOBCC_PROMPT

You are prompted for Bcc: (blind carbon copy) addresses only when you specify the ***/BCC*** or ***/BCC_PROMPT*** qualifier. Any Bcc: addresses which you supply appear as Resent-Bcc: addresses in the header of the redistributed message. Specifying ***/NOBCC_PROMPT*** inhibits Bcc: prompting. You may use the ***/BCC_LIST*** qualifier to specify one or more Bcc: addresses on the REDISTRIBUTE command line itself.

The ***/BCC*** qualifier is an abbreviation for ***/BCC_PROMPT***.

/CC

/CC_LIST=address[,...]

/CC_PROMPT

/NOCC_PROMPT

By default, you are prompted for Cc: (carbon copy) addresses only when you have previously used the SET CC_PROMPT command. The ***/CC_LIST***, ***/CC_PROMPT***, and ***/NOCC_PROMPT*** qualifiers override this behavior. Any Cc: addresses which you supply appear as Resent-Cc: addresses in the header of the redistributed message.

If you specify the ***/CC_PROMPT*** qualifier, you will be presented with a "Cc:" prompt to which you may specify zero or more Cc: addresses. Specifying ***/NOCC_PROMPT*** inhibits Cc: prompting. You may use the ***/CC_LIST*** qualifier to specify one or more Cc: addresses on the REDISTRIBUTE command line itself.

The ***/CC*** qualifier is an abbreviation for ***/CC_PROMPT***.

/DELAY_WARNING (default)

/NODELAY_WARNING

The qualifier controls whether or not PMDF requests that delay notifications be sent in case this message is not delivered immediately. The default is that PMDF requests delay notifications. However, note that some remote mailers may not support sender specification of whether delay notifications be sent and may unconditionally do one or the other regardless of whatever you request.

PMDF MAIL commands

REDISTRIBUTE

/DELIVERY_RECEIPT[=keyword]

/NODELIVERY_RECEIPT

Normally, a Delivery-receipt-to: header line is generated only when you have defined the PMDF_DELIVERY_RECEIPT logical. If you specify /NODELIVERY_RECEIPT, then no Delivery-receipt-to: line will be generated. If, instead, you specify the /DELIVERY_RECEIPT qualifier, then a delivery receipt will be requested of all recipients of the redistribution, and the PMDF_DELIVERY_RECEIPT logical, if defined, will be ignored. One of the keywords HEADER, NOTARY, or BOTH may optionally be specified to control what style of delivery receipt to construct (header style, NOTARY envelope style, or both, respectively).

/FROM=address

/NOFROM

When you specify /NOFROM, the PMDF_FROM logical is ignored and a standard Resent-From: header line containing your address is generated. When you use /FROM, the specified address is used to construct the Resent-From: header line, and your real (authenticated) address is placed in a Resent-Sender: header line.

/MULTIPLE

/SINGLE (default)

By default, you are prompted only once for each type of recipient address, To:, Cc:, and Bcc:. If you specify /MULTIPLE, then you will be prompted repeatedly for each of these address types. For each type, the prompt will repeat until you enter a blank line. /SINGLE selects the default behavior.

/PERSONAL_NAME=name

/NOPERSONAL_NAME

The /PERSONAL_NAME and /NOPERSONAL_NAME qualifiers override the setting of the SET PERSONAL_NAME command. When you use the /PERSONAL_NAME qualifier, then the specified name will be used in the personal name field of your return address which appears in the Resent-From: header line of your redistribution. Specifying /NOPERSONAL_NAME prevents any personal name from appearing in your return address.

/PRIORITY=priority

/NOPRIORITY

Normally, a Priority: header line is generated only when you have defined the PMDF_PRIORITY logical. If you specify /NOPRIORITY, then no Priority: line will be generated and any Priority: line already present in the message being redistributed will be removed. If, instead, you specify the /PRIORITY qualifier, the supplied priority will be included in a Priority: header line. The legal priorities are: NO-PRIORITY, THIRD-CLASS, SECOND-CLASS, NON-URGENT, NORMAL, and URGENT. NO-PRIORITY is equivalent to /NOPRIORITY.

/READ_RECEIPT

/NOREAD_RECEIPT

Normally, a Read-receipt-to: header line is generated only when you have defined the PMDF_READ_RECEIPT logical. If you specify /NOREAD_RECEIPT, then no Read-receipt-to: line will be generated. If, instead, you specify the /READ_RECEIPT qualifier, then a read receipt will be requested of all recipients of the redistribution, and any address specified by the PMDF_READ_RECEIPT logical will be ignored.

/REMOVE

/NOREMOVE (default)

When */REMOVE* is specified, your address will be removed from the list of recipients even if you explicitly specified your address as a To:, Cc:, or Bcc: address or have */COPY_SELF* enabled for forwarding. Your address will appear in the Cc: list if you specify */SELF*. The combination */ALL/REMOVE/SELF* is particularly useful as it prevents your own address from appearing in both the To: and Cc: address lists.

/RETURN_CONTENT (default)

/NORETURN_CONTENT

These qualifiers control whether return-of-content is requested for non-delivery reports.

/SELF

/NOSELF

The */SELF* and */NOSELF* qualifiers override the behavior of the SET COPY_SELF command. */SELF* causes a copy of your redistribution to be sent to yourself; your address will appear in the Resent-Cc: header line. When */NOSELF* is specified, you will not receive a copy of the message unless you explicitly include your address in the Resent-To:, Resent-Cc:, or Resent-Bcc: address lists.

/SENSITIVITY=sensitivity

/NOSENSITIVITY

Normally, a Sensitivity: header line is generated only when you have defined the PMDF_SENSITIVITY logical. If you specify */NOSENSITIVITY*, then no Sensitivity: line will be generated and any existing Sensitivity: line in the message being redistributed is removed. If, instead, you specify the */SENSITIVITY* qualifier, then the supplied sensitivity will be included in a Sensitivity: header line. The legal sensitivities are: NOT-SENSITIVE, PERSONAL, PRIVATE, and COMPANY-CONFIDENTIAL. NOT-SENSITIVE is equivalent to */NOSENSITIVITY*.

/SUBADDRESS=subaddress

Attaches a subaddress to your return address.

/TO

/TO_LIST=address[,...]

/TO_PROMPT (default)

/NOTO_PROMPT

By default, you are prompted for additional To: addresses when you redistribute a message. The */TO_PROMPT* qualifier explicitly requests this behavior. Use the */NOTO_PROMPT* qualifier if you do not want to be prompted for additional To: addresses to which to send your redistribution. You may use the */TO_LIST* qualifier to specify one or more To: addresses on the REPLY command line itself.

The To: addresses which you supply will appear in a Resent-To: header line in the redistributed message.

The */TO* qualifier is an abbreviation for */TO_PROMPT*.

PMDF MAIL commands

REDISTRIBUTE

/USER=username

Redistribute the message as though you are the specified user; that is, the Resent-From: address in the reply will be that of the specified user. No Resent-Sender: header line is added.

Use of this qualifier requires either WORLD privilege or the PMDF_WORLD or PMDF_WORLD_username rightslist identifier.

EXAMPLES

In the following example, the user fresnel@example.com has received a message from rex@example.com. Fresnel then redistributes this message, copying herself on the redistribution, to misha@example.com and beckett@example.com. Compare this example to that shown for the FORWARD command.

EMAIL> **READ 2**

Message MAIL 2

18-FEB-2012 08:27:45.18

Date: Thu, 18 Feb 2012 08:27:45 PDT 1
From: rex@example.com
Subject: Mrochek
To: fresnel@example.com

Have any of you seen Mrochek recently?

EMAIL> **REDISTRIBUTE/SELF 2**

To: **misha@example.com, beckett@example.com 3**

EMAIL>

New mail on node EXAMPLE from IN%"fresnel@example.com" 4

EMAIL> **READ/NEW**

Message NEWMAIL 1

18-FEB-2012 12:30:10.20

Resent-date: Thu, 18 Feb 2012 12:30:10 PDT 5
Resent-from: fresnel@example.com 6
Resent-to: misha@example.com, beckett@example.com 7
Resent-cc: fresnel@example.com 6
Date: Thu, 18 Feb 2012 08:27:45 PDT 8
From: rex@example.com
Subject: Mrochek
To: fresnel@example.com

Have any of you seen Mrochek recently?

EMAIL>

The following items of note are called out in the example above:

- 1 The header of the original message from rex@example.com.
- 2 The REDISTRIBUTE/SELF command is issued.
- 3 The redistribution is sent to misha@example.com and beckett@example.com.
- 4 Fresnel receives her copy of the redistribution. This copy was requested by the /SELF qualifier in 2 .
- 5 The date and time at which the redistribution was sent.

PMDF MAIL commands REDISTRIBUTE

- 6 The address of the individual, Fresnel, who sent this redistribution.
- 7 The recipients of the redistribution. Since Fresnel was copied on the redistribution (/SELF), Fresnel's address also appears in the Resent-cc; header line.
- 8 The original header message header as seen in 1 .

PMDF MAIL commands

REMOVE

REMOVE

Remove a record from the user profile database, VMSMAIL_PROFILE.DATA.

restrictions Requires SYSPRV privilege.

SYNTAX **REMOVE** [*username*]

Qualifiers	Defaults
<i>/LOG</i>	<i>/NOLOG</i>
<i>/UIC="[g,m]"</i>	<i>None</i>

PARAMETERS

username

Optional parameter specifying the username associated with the record to remove. The parameter value may contain wild cards in which case any record with a username matching the parameter value will be removed.

DESCRIPTION

The REMOVE command removes one or more user entries from the profile database, VMSMAIL_PROFILE.DATA. At sites with high user turnover (*e.g.*, schools), the profile database can over the course of a few years become populated with records corresponding to non-existent users. The /UIC qualifier can come in especially useful in cases where entire classes of deleted accounts have the same UIC group number.

If the username parameter contains a wild card, then the entire profile database will be scanned looking for entries which match the specified username. Any record which matches is then removed. If a UIC specification is given (with or without wild cards), then the entire profile database is scanned and the UIC obtained for each username entry. Any entries with a matching UIC are removed. Both username and UIC specifications may simultaneously be specified.

QUALIFIERS

/LOG

/NOLOG (default)

When /LOG is specified, a message will be output for each record removed.

/UIC="[g,m]"

When the */UIC* qualifier is used, the entire profile database is scanned looking for usernames which correspond to the specified UIC. An asterisk wild card, ***, may be specified for either or both of the group (*g*) or member (*m*) numbers. */UIC="[*,*]"* is equivalent to */USER=**.

Be sure to enclose the UIC specification in quotes; *e.g.*, "[111,3]".

EXAMPLES

1 EMAIL> REMOVE CATS-LIST

In this example, the profile entry for CATS-LIST is removed. Note that when you use the SET FORWARD command to establish forwarding of non-existent usernames (*e.g.*, CATS-LIST), an entry in the profile database is made for that non-existent username.

2 EMAIL> REMOVE/LOG/UIC= [1123,*]
%EMAIL-S-REMRECORD, AASH record removed
%EMAIL-S-REMRECORD, BSMITH record removed
.
.
.
%EMAIL-S-REMRECORD, ZSMITH record removed
%EMAIL-I-REMRECORDS, 113 records removed
EMAIL>

In this example, all profile entries for users in the [1123,*] UIC group are removed. Note that not all users may have an entry in the profile database. A user will only have an entry if she or he has issued a SET command from within VMS MAIL, DECwindows MAIL, or PMDF MAIL.

PMDf MAIL commands

REPLY

REPLY

Reply to a mail message.

SYNTAX

REPLY [*file-spec*[,...]]

Qualifiers

<i>/ABORT</i>	<i>See text</i>
<i>/ALL</i>	<i>/NOALL</i>
<i>/BCC</i>	<i>/NOBCC_PROMPT</i>
<i>/BCC_LIST=address</i>	<i>None</i>
<i>/BCC_PROMPT</i>	<i>/NOBCC_PROMPT</i>
<i>/CC</i>	<i>See text</i>
<i>/CC_LIST=address</i>	<i>None</i>
<i>/CC_PROMPT</i>	<i>See text</i>
<i>/COMMENTS</i>	<i>See text</i>
<i>/DELAY_WARNING</i>	<i>/DELAY_WARNING</i>
<i>/DELIVERY_RECEIPT</i>	<i>See text</i>
<i>/DIGEST=number</i>	<i>/NODIGEST</i>
<i>/EDIT[=option]</i>	<i>/NOEDIT</i>
<i>/ENCAPSULATE</i>	<i>/ENCAPSULATE</i>
<i>/ENTIRE</i>	<i>/PART</i>
<i>/EXTRACT</i>	<i>See text</i>
<i>/FROM=address</i>	<i>None</i>
<i>/IGNORE</i>	<i>See text</i>
<i>/INSERT</i>	<i>See text</i>
<i>/LAST</i>	<i>/NOLAST</i>
<i>/LIST</i>	<i>See text</i>
<i>/MESSAGE</i>	<i>/PART</i>
<i>/MULTIPLE</i>	<i>/SINGLE</i>
<i>/PART</i>	<i>/PART</i>
<i>/PERSONAL_NAME=name</i>	<i>See text</i>
<i>/PRIORITY=priority</i>	<i>See text</i>
<i>/READ_RECEIPT</i>	<i>See text</i>
<i>/REMOVE</i>	<i>/NOREMOVE</i>
<i>/REPEATED</i>	<i>/REPEATED</i>
<i>/RESENT</i>	<i>/NORESENT</i>
<i>/REPLY_TO=address</i>	<i>See text</i>
<i>/RETURN_CONTENT</i>	<i>/RETURN_CONTENT</i>
<i>/SELF</i>	<i>See text</i>
<i>/SENSITIVITY=sensitivity</i>	<i>See text</i>
<i>/SIGNATURE=text</i>	<i>See text</i>
<i>/SINGLE</i>	<i>/SINGLE</i>
<i>/SUBADDRESS</i>	<i>None</i>
<i>/SUBJECT=subject</i>	<i>See text</i>
<i>/TO</i>	<i>/NOTO_PROMPT</i>
<i>/TO_LIST=address</i>	<i>None</i>
<i>/TO_PROMPT</i>	<i>/NOTO_PROMPT</i>
<i>/TRIM_HEADER</i>	<i>/NOTRIM_HEADER</i>

Defaults

/USER=username *None*

Positional Qualifiers	Defaults
<i>/BLOCK</i>	<i>/TEXT</i>
<i>/EIGHTBIT=option</i>	<i>/EIGHTBIT=LEAVE</i>
<i>/ENCODING=encoding</i>	<i>None</i>
<i>/FILENAME=name</i>	<i>/NOFILENAME</i>
<i>/RECORD</i>	<i>/TEXT</i>
<i>/TEXT</i>	<i>/TEXT</i>

PARAMETERS

file-spec[,...]

Optional list of one or more files to send as the reply. If */INSERT* is specified, then these files will be sent as attachments to the reply which you enter as you would any other mail message.

DESCRIPTION

Use the **REPLY** command to reply to a mail message which you have just read. By default, the reply will be sent to the address specified on the Reply-to: header line of the message being replied to if one is present, to the From: header line if no Reply-to: is present, and to the Sender: header line if neither Reply-to: nor From: are present. The */LIST*, */RESENT*, and */ALL* qualifiers further modify this behavior:

/LIST — If a Reply-to: address was specified in the message being responded to, then direct the reply to that address. */LIST* is the default unless */ALL* is specified, in which case the default is */NOLIST*.

/RESENT — Use, preferentially, any resent header lines which might be present in the message being responded to.

/ALL — Also send the message to any To:, Cc:, or Bcc: recipients who appeared in the message being responded to. */ALL* also changes the default from */LIST* to */NOLIST*.

Use the */CC*, */BCC*, or */TO* qualifiers if you want to specify additional recipients to whom a copy of your reply should be sent.

If you do not specify any files, or if you specify the */INSERT* qualifier, then you will be prompted for the text of your reply. In the case of the */INSERT* qualifier, any files which you specified will be sent as attachments to your reply.

To abort a message reply, enter **CTRL/C**. If you are entering the reply from an editor, then exit the editor without saving your reply.

PMDF MAIL commands

REPLY

QUALIFIERS

/ABORT

/IGNORE

The */ABORT* qualifier causes the message reply to fail if any of the To:, Cc:, or Bcc: addresses prove to be illegal. The */IGNORE* qualifier permits the reply to be sent provided that at least one of the addresses is legal. The illegal addresses are ignored and will not appear in the message's header. The default behavior, if neither */ABORT* or */IGNORE* are specified, is to prompt you when any of the addresses are illegal. You will be given the choice of whether to cancel the reply or to go ahead and send the reply to only the legal addresses.

/ALL

/NOALL (default)

By default, when you reply to a message the reply is directed to the From: or Sender: address associated with the message to which you are replying. The */NOALL* qualifier explicitly requests this behavior. However, with the */ALL* qualifier you can direct the reply to both the From: or Sender: address and all other recipient addresses, To:, Cc:, and Bcc:, appearing in the message.

Note that the Reply-to: address, if present, is not selected by the */ALL* qualifier. Use the */LIST* qualifier to select the Reply-to: address in addition to the other addresses selected with the */ALL* qualifier.

/BCC

/BCC_LIST=address[,...]

/BCC_PROMPT

/NOBCC_PROMPT

You are prompted for Bcc: (blind carbon copy) addresses only when you specify either the */BCC* or */BCC_PROMPT* qualifier. Specifying */NOBCC_PROMPT* inhibits Bcc: prompting. You may use the */BCC_LIST* qualifier to specify one or more Bcc: addresses on the REPLY command line itself.

The */BCC* qualifier is an abbreviation for */BCC_PROMPT*.

/COMMENTS=comment

/NOCOMMENTS

Normally, a Comments: header line is generated only when you have defined the PMDF_COMMENTS logical. If you specify */NOCOMMENTS*, then that logical will not be used and no Comments: line will be added to the header of the reply. If, instead, you specify a comment with the */COMMENTS* qualifier, then that comment will be placed on a Comments: header line, and PMDF_COMMENTS, if defined, will be ignored.

/CC

/CC_LIST=address[,...]

/CC_PROMPT

/NOCC_PROMPT

By default, you are prompted for Cc: (carbon copy) addresses only when you have previously used the SET CC_PROMPT command. The */CC_LIST*, */CC_PROMPT*, and */NOCC_PROMPT* qualifiers override this behavior. If you specify the */CC_PROMPT* qualifier, you will be presented with a "Cc:" prompt to which you may specify zero or more Cc: addresses. Specifying */NOCC_PROMPT* inhibits

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REPLY

Cc: prompting. You may use the /CC_LIST qualifier to specify one or more Cc: addresses on the REPLY command line itself.

The /CC qualifier is an abbreviation for /CC_PROMPT.

/DELAY_WARNING (default)
/NODELAY_WARNING

The qualifier controls whether or not PMDF requests that delay notifications be sent in case this message is not delivered immediately. The default is that PMDF requests delay notifications. However, note that some remote mailers may not support sender specification of whether delay notifications be sent and may unconditionally do one or the other regardless of whatever you request.

/DELIVERY_RECEIPT[=keyword]
/NODELIVERY_RECEIPT

Normally, a Delivery-receipt-to: header line is generated only when you have defined the PMDF_DELIVERY_RECEIPT logical. If you specify /NODELIVERY_RECEIPT, then no Delivery-receipt-to: line will be generated. If, instead, you specify the /DELIVERY_RECEIPT qualifier, then a delivery receipt will be requested of all recipients of the reply, and the PMDF_DELIVERY_RECEIPT logical, if defined, will be ignored. One of the keywords HEADER, NOTARY, or BOTH may optionally be specified to control what style of delivery receipt to construct (header style, NOTARY envelope style, or both, respectively).

/DIGEST=number[,...]
/NODIGEST (default)

Your reply may contain one or more messages encapsulated into a MIME message digest. This is done with the /DIGEST qualifier. With that qualifier, specify one or more messages via their message numbers. Ranges are permitted: /DIGEST=(1,3,6-9,15-20) specifies messages 1, 3, 6 through 9, and 15 through 20.

/EDIT[=option]
/NOEDIT (default)

To compose your reply from within an editor, specify the /EDIT qualifier. The /NOEDIT qualifier prevents an editor from being invoked. By default, an editor is only invoked if, when you ran PMDF MAIL, you specified the qualifier /EDIT=(REPLY).

By default the message's RFC 822 header will also appear in the editor. To suppress the presentation of the RFC 822 header, specify /EDIT=NOHEADER. To request that the header appear in the editor, specify /EDIT=HEADER.

/EXTRACT[=quote]
/EXTRACT=NONE
/NOEXTRACT

When you specify /EXTRACT, the content of the message to which you are replying will be included in your reply. The editor will be invoked so that you may edit the reply before it is sent. When /NOEXTRACT is specified, the content of the original message will not be included in the reply.

The optional quote string specifies a text string to preface each line of the extracted message with. If specified, this string will override any profile setting or setting

PMDF MAIL commands

REPLY

made when PMDF MAIL was invoked. Specify NONE to prevent any quoting from occurring.

If PMDF MAIL was invoked with the qualifier /EDIT=(REPLY=EXTRACT), then /EXTRACT will be the default behavior when you reply to a message; otherwise, /NOEXTRACT will be the default.

/ENCAPSULATE (default)

/NOENCAPSULATE

Specify whether or not to treat input files specified with the optional **file-spec** parameter as separate attachments each encapsulated as a separate message body part.

/ENTIRE

/MESSAGE

/PART (default)

By default, when you reply to a multipart or nested message, only the current message part is responded to (addressing information is extracted from that message part). This behavior is explicitly requested with the /MESSAGE qualifier. To reply to the entire message, specify /ENTIRE (addressing information is extracted from the outermost set of message headers); to reply to only the current part, use /PART. In regards to the source of reply address information, /PART and /MESSAGE are equivalent; however, in regards to the /EXTRACT qualifier, /PART causes only the current part to be extracted whereas /MESSAGE leads to the current message part being extracted.

When replying to a single-part message which is not nested, the /ENTIRE, /PART, and /MESSAGE qualifiers are identical and have no effect.

/FROM=address

/NOFROM

When you specify /NOFROM, the PMDF_FROM logical is ignored and a standard From: header line containing your address is generated. When you use /FROM, the specified address is used to construct the From: header line, and your real (authenticated) address is placed in a Sender: header line.

/INSERT

/NOINSERT

The /INSERT qualifier instructs PMDF MAIL to prompt you for additional message text and insert it as an attachment to the message. The additional text entered by hand (either through an editor or in response to the "Enter your message below" prompt) will be placed at the top of the message, with any attached files appearing afterwards.

/LAST

/NOLAST (default)

The /LAST qualifier causes the content of the last message you sent to be used as the content of the reply. /NOLAST selects the default behavior in which you are expected to generate the content of the reply yourself.

/LIST (default)

/NOLIST

Use /LIST to direct the reply to the Reply-to: address, if present, rather than the From: or Sender: address. The reply will be sent to the From: or Sender: address of the message being responded to if /NOLIST is specified. Note that /NOLIST becomes the default if /ALL is specified.

/MULTIPLE***/SINGLE (default)***

By default, you are prompted only once for each type of recipient address, To:, Cc:, and Bcc:. If you specify */MULTIPLE*, then you will be prompted repeatedly for each of these address types. For each type, the prompt will repeat until you enter a blank line. */SINGLE* selects the default behavior.

/PERSONAL_NAME=name***/NOPERSONAL_NAME***

The */PERSONAL_NAME* and */NOPERSONAL_NAME* qualifiers override the setting of the SET PERSONAL_NAME command. When you use the */PERSONAL_NAME* qualifier, the specified name will be used in the personal name field of your return address which appears in the From: header line of your reply. Specifying */NOPERSONAL_NAME* prevents any personal name from appearing in your return address.

/PRIORITY=priority***/NOPRIORITY***

Normally, a Priority: header line is generated only when you have defined the PMDF_PRIORITY logical. If you specify */NOPRIORITY*, then no Priority: line will be generated. If, instead, you specify the */PRIORITY* qualifier, then the supplied priority will be included in a Priority: header line. The legal priorities are: NO-PRIORITY, THIRD-CLASS, SECOND-CLASS, NON-URGENT, NORMAL, and URGENT. NO-PRIORITY is equivalent to */NOPRIORITY*.

/READ_RECEIPT***/NOREAD_RECEIPT***

Normally, a Read-receipt-to: header line is generated only when you have defined the PMDF_READ_RECEIPT logical. If you specify */NOREAD_RECEIPT*, then no Read-receipt-to: line will be generated. If, instead, you specify the */READ_RECEIPT* qualifier, then a read receipt will be requested of all recipients of the reply, and any address specified by the PMDF_READ_RECEIPT logical will be ignored.

/REPEATED (default)***/NOREPEATED***

/REPEATED, the default, requests that all repeated address header lines in the message being replied to be examined. For instance, some messages may contain multiple To: header lines. To cause only the first of each header line to be examined, specify */NOREPEATED*. Do not confuse repeated header lines with header lines which are merely wrapped and appear as several lines on your terminal display. Wrapped lines begin with a space; repeated header lines always begin with a field name such as "To:"

/REPLY_TO=address***/NOREPLY_TO***

Normally, a Reply-to: header line is generated only when you have defined the PMDF_REPLY_TO logical. If you specify */NOREPLY_TO*, then no Reply-to: line will be generated. If, instead, you specify the */REPLY_TO* qualifier, then the supplied address will be placed in a Reply-to: header line, and any PMDF_REPLY_TO logical ignored.

/REMOVE***/NOREMOVE (default)***

When */REMOVE* is specified, your address will be removed from the list of recipients even if you explicitly specified your address as a To:, Cc:, or Bcc: address

PMDF MAIL commands

REPLY

or have `/COPY_SELF` enabled for replies. Your address will appear in the Cc: list if you specify `/SELF`. The combination `/ALL/REMOVE/SELF` is particularly useful as it prevents your own address from appearing in both the To: and Cc: address lists.

/RESENT

/NORESENT (default)

By default, replies are sent to the From: address if present and the Sender: address otherwise. When `/RESENT` is specified, the Resent-From: or Resent-Sender: address will be used in preference to the From: or Sender: address.

/RETURN_CONTENT (default)

/NORETURN_CONTENT

These qualifiers control whether return-of-content is requested for non-delivery reports.

/SELF

/NOSELF

The `/SELF` and `/NOSELF` qualifiers override the behavior of the `SET COPY_SELF` command. `/SELF` causes a copy of your reply to be sent to you; your address will appear in the Cc: header line. When `/NOSELF` is specified, you will not receive a copy of the message unless you explicitly include your address in the To:, Cc:, or Bcc: address lists.

/SENSITIVITY=sensitivity

/NOSENSITIVITY

Normally, a Sensitivity: header line is generated only when you have defined the `PMDF_SENSITIVITY` logical. If you specify `/NOSENSITIVITY`, then no Sensitivity: line will be generated. If, instead, you specify the `/SENSITIVITY` qualifier, then the supplied sensitivity will be included in a Sensitivity: header line. The legal sensitivities are: NOT-SENSITIVE, PERSONAL, PRIVATE, and COMPANY-CONFIDENTIAL. NOT-SENSITIVE is equivalent to `/NOSENSITIVITY`.

/SIGNATURE=signature-spec

/NOSIGNATURE

Normally, signature lines are appended to the end of your message only if the `PMDF_SIGNATURE` logical is defined. When you specify `/NOSIGNATURE`, no signature lines are appended to your reply. When, however, you specify the `/SIGNATURE` qualifier, then the specified signature is appended to your message. If **signature-spec** begins with an at-sign, @, then the signature lines are copied from the file name following the at-sign; otherwise, **signature-spec** itself is appended to the end of the reply.

/SUBADDRESS=subaddress

Attaches a subaddress to your return address.

/SUBJECT=subject

/NOSUBJECT

By default, the Subject: line in your reply will be copied from the message to which you are responding. You may omit entirely any Subject: line from your reply with the `/NOSUBJECT` qualifier. Or, alternatively, you may specify an entirely different Subject: line with the `/SUBJECT` qualifier.

/TO
/TO_LIST=address[,...]
/TO_PROMPT
/NOTO_PROMPT (default)

By default, you are not prompted for additional To: addresses when you reply to a message. The */NOTO_PROMPT* qualifier explicitly requests this behavior. Use the */TO_PROMPT* qualifier if you want to be prompted for additional To: addresses to which to send your reply. You may use the */TO_LIST* qualifier to specify one or more To: addresses in the REPLY command line itself.

The */TO* qualifier is an abbreviation for */TO_PROMPT*.

/TRIM_HEADER
/NOTRIM_HEADER (default)

By default, no header trimming is applied to any included messages. Use the */TRIM_HEADER* qualifier to apply header trimming to any included messages.

/USER=username

Reply as though you are the specified user; that is, the From: address in the reply will be that of the specified user. No Sender: header line is added. Use of this qualifier requires either WORLD privilege or the PMDF_WORLD or PMDF_WORLD_Username rightslist identifier.

The */USER* qualifier is intended for use by postmasters. It comes in handy when you need to unsubscribe a user from a remote mailing list. */NOPERSONAL_NAME* is assumed when */USER* is specified.

POSITIONAL QUALIFIERS

/BLOCK
/RECORD
/TEXT

The */BLOCK*, */RECORD*, and */TEXT* positional qualifiers may only be used in conjunction with an input file specification. These qualifiers allow you to override the default file reading (access) mode which PMDF would otherwise use to read the input file.

Typically, PMDF uses */TEXT*.

/EIGHTBIT=option
/NOEIGHTBIT

Specify how to handle eight bit characters found in an input file (*i.e.*, characters for which the eighth bit is set). The available options are:

HEXIFY	Replace each eight bit character with =XX where "XX" is the character's ordinal value expressed in hexadecimal.
LEAVE	Leave eight bit characters untouched. This is the default behavior.
REMOVE	Remove eight bit characters from the message; removed characters are not replaced with anything to indicate their removal or former presence.
REPLACE	Replace each eight bit character with a question mark, "?".

PMDF MAIL commands

REPLY

STRIP Clear the eighth bit in each character of the message; *i.e.*, “strip” the eighth bit from eight bit characters.

The default behavior is `/EIGHTBIT=LEAVE`. Use `/NOEIGHTBIT` or `/EIGHTBIT=REMOVE` to remove all eight bit characters from input files.

/ENCODING=encoding

The `/ENCODING` positional qualifier may only be used in conjunction with an input file specification. The `/ENCODING` qualifier allows you to override the default file encoding method which PMDF would otherwise use to encode the input file. The legal encoding types are: NONE, 8BIT, 7BIT, BASE32, BASE64, BASE85, BINHEX, BTOA, HEXADECIMAL, OLD-BASE64 (for use with PMDF V4.0), PATHWORKS, QUOTED-PRINTABLE, UUENCODE, COMPRESSED-BASE64, and COMPRESSED-UUENCODE.

/FILENAME=name

/NOFILENAME (default)

The `/FILENAME` and `/NOFILENAME` positional qualifiers may only be used in conjunction with an input file specification. When an input file is attached as a separate message body part to the reply, that part's Content-type: header line will, by default, omit the optional file name parameter. This default behavior is explicitly selected with the `/NOFILENAME` qualifier. When `/FILENAME` is specified, the name of the input file will be included in the Content-type: header line. If no value is specified on the `/FILENAME` qualifier, then the name of the input file is used.

EXAMPLES

```
1 EMAIL> READ 2 1
Message MAIL 2 18-FEB-2012 08:27:45.18
Date: Thu, 18 Feb 2012 08:27:45 PDT
From: rex@example.com
Subject: Mrochek
To: misha@example.com, beckett@example.com
Cc: fresnel@example.com
Have any of you seen Mrochek recently?
EMAIL> REPLY/ALL/EDIT
To: rex@example.com 2
Cc: misha@example.com, beckett@example.com, fresnel@example.com 3
Subject: RE: Mrochek
1 Date: Fri, 19 Feb 2012 20:40:24 PDT
* C
.
.
.
* EXIT
D1: [MISHA]MAIL_01GV430A0XRS8WW9J2_SEND.TMP;2 12 lines
EMAIL>
```

Here, after reading a mail message, 1, a reply is sent. The reply is directed to the sender of the original message, rex@example.com (2). In addition, the `/ALL` qualifier is used to specify that the recipients of the original message should all be copied on the

response, 3 . The /EDIT qualifier causes the editor to be invoked and used to generate and edit the response. Once the editor is exited, the response is sent.

2

EMAIL> **READ/NEW**

Message NEWMAIL 1

24-FEB-2012 14:18:18.69

Date: Wed, 24 Feb 2012 14:18:18 PDT
From: "John Doe" <JOHNDOE@EXAMPLE.COM>
Subject: Please send me the test results ASAP
To: JANEDOE@EXAMPLE.COM

Jane,
Please send me the latest test results as soon as possible.
Thanks, John

EMAIL> **REPLY/INSERT 23FEB.DAT_1,23FEB.DAT_2**

To: "John Doe" <JOHNDOE@EXAMPLE.COM>
Subject: RE: Please send me the test results ASAP
Enter your message below. Press CTRL/Z when complete, or CTRL/C to quit:
Attached below are two files with the results of the latest 1 runs. I haven't yet looked at them myself.

CTRL/Z

EMAIL>

In this example, a response is sent which has two file attachments: 23FEB.DAT_1 and 23FEB.DAT_2. These attachments accompany the message which begins with a simple text message, 1 .

PMDf MAIL commands

RESEND

RESEND

Redistribute a message.

SYNTAX **RESEND**

PARAMETERS *None.*

DESCRIPTION

The RESEND command is identical to the REDISTRIBUTE command. For information on the use of the RESEND command, consult the description of the REDISTRIBUTE command.

SEARCH

Search for messages containing a specific phrase.

SYNTAX

SEARCH *search-string*

Qualifiers	Defaults
<i>/BINARY_PARTS</i>	<i>/NOBINARY_PARTS</i>
<i>/BEFORE=date</i>	<i>None</i>
<i>/CC_SUBSTRING=text</i>	<i>None</i>
<i>/FROM_SUBSTRING=text</i>	<i>None</i>
<i>/FOLDERS=(folder-name[,...])</i>	<i>None</i>
<i>/INTERPRETED</i>	<i>/NOINTERPRETED</i>
<i>/MARKED</i>	<i>None</i>
<i>/REPLIED</i>	<i>None</i>
<i>/SINCE=date</i>	<i>None</i>
<i>/SUBJECT_SUBSTRING=text</i>	<i>None</i>
<i>/TEXT_PARTS</i>	<i>/TEXT_PARTS</i>
<i>/TRIM_HEADER</i>	<i>/TRIM_HEADER</i>
<i>/TO_SUBSTRING=text</i>	<i>None</i>

PARAMETERS

search-string

Parameter specifying the phrase (*i.e.*, a string of text) to search for.

DESCRIPTION

The SEARCH command searches messages looking for the specified string. By default, only the currently selected messages are searched. However, if the /FOLDERS qualifier is specified, then messages from the specified folders will be selected.

If the SEARCH command finds a message containing the specified search string, then that message will be displayed. To continue the search simply enter the SEARCH command without specifying the search string parameter. If you specify that parameter, then the search will be started all over again.

Note that by default, the messages to be searched are read out of your mail folder with no special interpretation ascribed to the raw text so obtained. This means that if the message contains, for instance, encoded data, then that data will be searched in its encoded form. If you specify the /INTERPRETED qualifier, then each message will first be interpreted as an RFC 822/RFC 1521 (MIME) message and then searched. Doing this, however, will noticeably slow down the searching process.

PMDF MAIL commands

SEARCH

QUALIFIERS

/BINARY_PARTS

/NOBINARY_PARTS (default)

By default, binary parts of interpreted messages are not searched. Specify */BINARY_PARTS* to specify that any binary data also be searched. In general, binary parts are message parts of content types other than text or message. Not all application subtypes may be treated as binary data; *e.g.*, application/postscript.

This qualifier has no effect unless the */INTERPRETED* qualifier is also specified.

/BEFORE[=date]

Select messages dated before the specified date. All the messages received before the current day are selected if no date is specified. This qualifier has no effect unless the */FOLDERS* qualifier is also specified.

/CC_SUBSTRING=text

Select messages containing **text** in the VMS MAIL Cc: header line of the message. This qualifier has no effect unless the */FOLDERS* qualifier is also specified.

/FROM_SUBSTRING=text

Select messages containing **text** in the VMS MAIL From: header line of the message. This qualifier has no effect unless the */FOLDERS* qualifier is also specified.

/FOLDERS=(folder-name,...)

Search messages from each of the specified folders.

/INTERPRETED

/NOINTERPRETED (default)

By default, no special interpretation is ascribed to the raw text of each message; the raw text is blindly searched for the search string. If you wish to first interpret each message as an RFC 822/RFC 1521 (MIME) message and then search the interpreted message, specify */INTERPRETED*. Interpreting message data is sometimes necessary as the data may be encoded and require decoding to be meaningful.

/MARKED

/NOMARKED

Select messages that have been marked, */MARKED*, or are not marked, */NOMARKED*. This qualifier has no effect unless the */FOLDERS* qualifier is also specified.

/REPLIED

/NOREPLIED

Select messages that have been replied to, */REPLIED*, or have not been replied to, */NOREPLIED*. This qualifier has no effect unless the */FOLDERS* qualifier is also specified.

/SINCE[=date]

Select messages dated since the specified date. All the messages received on the current day are selected if no date is specified. This qualifier has no effect unless the */FOLDERS* qualifier is also specified.

/SUBJECT_SUBSTRING=text

Select messages containing **text** in the VMS MAIL Subject: header line of the message. This qualifier has no effect unless the /FOLDERS qualifier is also specified.

/TEXT_PARTS (default)

/NOTEXT_PARTS

By default, only message headers and text parts of interpreted messages are searched. When /NOTEXT_PARTS is specified, then text parts will not be searched. In such a case, be sure to specify /BINARY_PARTS or else no part of the messages will be searched. In general, text parts include any message body part of content type text, message, and some application subtypes such as application/postscript.

This qualifier has no effect unless the /INTERPRETED qualifier is also specified.

/TO_SUBSTRING=text

Select messages containing **text** in the VMS MAIL To: header line of the message. This qualifier has no effect unless the /FOLDERS qualifier is also specified.

/TRIM_HEADER (default)

/NOTRIM_HEADER

When an interpreted message is searched, only its trimmed message header is searched. If you wish to search the full header of each message, specify /INTERPRETED/NOTRIM_HEADER. This qualifier has no effect unless the /INTERPRETED qualifier is also specified.

EXAMPLES

```
1 EMAIL> SELECT JOKES
  %EMAIL-I-SELECTED, 42 messages selected
  EMAIL> SEARCH DOG

  Message MAIL 21                                24-FEB-2012 12:19:25.69

  Date: Wed, 24 Feb 2012 12:19:25 PDT
  From: "John Doe" <JDOE@EXAMPLE.COM>
  Subject: funny jokes
  To: JPUBLIC@EXAMPLE.COM

  Q: What do you get when you cross an agnostic, dyslexic, and insomniac?
  A: Someone who lies awake at night wondering if there really is a Dog.

  EMAIL> SEARCH
  %EMAIL-E-NOTFOUND, no messages containing 'DOG' found
  EMAIL>
```

In this example the JOKES folder is selected and then searched for the string "DOG". Message 21 is found to contain this string and thus displayed. A second SEARCH command, without the search string parameter, is specified so as to continue the search. No further messages containing DOG are found.

PMDf MAIL commands

SEARCH

```
2 EMAIL> SEARCH/FOLDERS=(WORK_JAN,WORK_FEB) WHISTLE
%EMAIL-I-SEARCHING, 81 messages selected from folder WORK_JAN
%EMAIL-I-SEARCHING, 73 messages selected from folder WORK_FEB
%EMAIL-E-NOTFOUND, no messages containing 'WHISTLE' found
EMAIL>
```

In this example, the folders WORK_JAN and WORK_FEB are searched for the string "WHISTLE"; the string is not found in any messages in either folder.

SELECT

Select messages from a folder.

SYNTAX

SELECT [*folder-name* [*mail-file-spec*]]

Qualifiers	Defaults
<i>/BEFORE=date</i>	<i>None</i>
<i>/CC_SUBSTRING=text</i>	<i>None</i>
<i>/FROM_SUBSTRING=text</i>	<i>None</i>
<i>/MARKED</i>	<i>None</i>
<i>/NEW</i>	<i>None</i>
<i>/REPLIED</i>	<i>None</i>
<i>/SINCE=date</i>	<i>None</i>
<i>/SUBJECT_SUBSTRING=text</i>	<i>None</i>
<i>/TO_SUBSTRING=text</i>	<i>None</i>

PARAMETERS

folder-name

Optional parameter specifying the name of the folder to select messages from.

mail-file-spec

Optional parameter specifying the mail file to open.

DESCRIPTION

The SELECT command selects a collection of messages from a folder. This selection becomes your set of “currently selected messages”. The commands shown below may then be used to manipulate the selected messages.

Command	Brief description
ANSWER, REPLY	Reply to a selected message
COPY	Copy one or more of the selected messages to another folder or mail file
DELETE	Delete one or more of the selected messages
DIRECTORY	List the selected messages
EXTRACT	Extract one or more of the selected messages to an external file
FILE, MOVE	Move one or more of the selected messages to another folder or mail file
FORWARD	Forward a selected message to another address
MARK, UNMARK	Flag one or more of the selected messages
PRINT	Print one or more of the selected messages

PMDF MAIL commands

SELECT

Command	Brief description
READ	Display one of the selected messages
REDISTRIBUTE, RESEND	Resend a selected message to another address
SEARCH	Search for messages containing a specific phrase

The SELECT command opens the specified folder in either the specified mail file or, if no mail file specification is given, in the currently open mail file. If no mail file is currently open, the default mail file, MAIL.MAI, is opened. When the optional folder name specification is omitted, the default folder is opened. The name of the folder depends upon which mail file is open. For the default mail file, the default folder is NEWMAIL if it contains any new messages, and MAIL otherwise. When a mail file other than the default file is open, the default folder is the folder with the same name as the mail file itself (*e.g.*, JOKES is the default folder for the mail file JOKES.MAI).

If you select a folder that does not exist, PMDF MAIL displays the following message:

```
%EMAIL-E-NOTEXIST, folder "folder-name" does not exist
```

where *folder-name* is the folder you tried to select.

Note that the DIRECTORY, READ, SEARCH, and SET FOLDER commands may also be used to select messages from a folder.

QUALIFIERS

/BEFORE[=date]

Select messages dated before the specified date. All the messages received before the current day are selected if no date is specified.

/CC_SUBSTRING=text

Select messages containing **text** in the VMS MAIL Cc: header line of the message.

/FROM_SUBSTRING=text

Select messages containing **text** in the VMS MAIL From: header line of the message.

/MARKED

/NOMARKED

Select messages that have been marked, /MARKED, or are not marked, /NOMARKED.

/NEW

Select new (unread) messages from the NEWMAIL folder of your default mail file, MAIL.MAI. If any other mail file is open, it is closed and the default mail file opened.

/REPLIED

/NOREPLIED

Select messages that have been replied to, */REPLIED*, or have not been replied to, */NOREPLIED*.

/SINCE[=date]

Select messages dated since the specified date. All the messages received on the current day are selected if no date is specified.

/SUBJECT_SUBSTRING=text

Select messages containing **text** in the VMS MAIL Subject: header line of the message.

/TO_SUBSTRING=text

Select messages containing **text** in the VMS MAIL To: header line of the message.

EXAMPLES

1 EMAIL> **SELECT/NEW**
%EMAIL-I-SELECTED, 2 messages selected

This example shows how to select your new, unread mail.

2 EMAIL> **DIRECTORY/FOLDER**
Listing of folders in D1:[BOB]MAIL.MAI;1
Press CTRL/C to cancel listing
MAIL NEWMAIL
WASTEBASKET
EMAIL> **SELECT/SINCE NEWMAIL**
%EMAIL-I-SELECTED, 1 message selected
EMAIL>

In this example, the **DIRECTORY/FOLDER** command is first used to list the folders in the current mail file. Next, the **SELECT** command is used to select today's new messages from the **NEWMAIL** folder.

3 EMAIL> **SET FOLDER JOKES**
EMAIL> **MOVE/ALL JOKES JOKES.MAI**
File D1:[BOB]JOKES.MAI; does not exist.
Do you want to create it (Y/N, default is N)? **Y**
EMAIL> **SET FILE JOKES.MAI**

In this example, all of the messages from the **JOKES** folder are moved to the folder **JOKES** in the mail file **JOKES.MAI**. The **SET FILE** command is then used to close the current mail file and open **JOKES.MAI**.

PMDf MAIL commands

SEND

SEND

Send a mail message.

SYNTAX

SEND [*file-spec*[,...]]

Qualifiers

<i>/ABORT</i>	See text
<i>/BCC</i>	<i>/NOBCC_PROMPT</i>
<i>/BCC_LIST=address</i>	None
<i>/BCC_PROMPT</i>	<i>/NOBCC_PROMPT</i>
<i>/CC</i>	See text
<i>/CC_LIST=address</i>	None
<i>/CC_PROMPT</i>	See text
<i>/COMMENTS</i>	See text
<i>/CONFIRM</i>	<i>/NOCONFIRM</i>
<i>/DELAY_WARNING</i>	<i>/DELAY_WARNING</i>
<i>/DELIVERY_RECEIPT</i>	See text
<i>/DIGEST</i>	See text
<i>/EDIT</i>	<i>/NOEDIT</i>
<i>/ENCAPSULATE</i>	<i>/ENCAPSULATE</i>
<i>/FROM=address</i>	<i>/NOFROM</i>
<i>/IGNORE</i>	See text
<i>/INSERT</i>	See text
<i>/LAST</i>	<i>/NOLAST</i>
<i>/MULTIPLE</i>	<i>/SINGLE</i>
<i>/PERSONAL_NAME=name</i>	See text
<i>/PRIORITY=priority</i>	See text
<i>/READ_RECEIPT</i>	See text
<i>/REMOVE</i>	<i>/NOREMOVE</i>
<i>/REPLY_TO=address</i>	See text
<i>/RETURN_CONTENT</i>	<i>/RETURN_CONTENT</i>
<i>/SELF</i>	See text
<i>/SENSITIVITY=sensitivity</i>	See text
<i>/SINGLE</i>	<i>/SINGLE</i>
<i>/SIGNATURE=text</i>	See text
<i>/SUBADDRESS</i>	None
<i>/SUBJECT=subject</i>	See text
<i>/TO</i>	<i>/TO_PROMPT</i>
<i>/TO_LIST=address</i>	None
<i>/TO_PROMPT</i>	<i>/TO_PROMPT</i>
<i>/USER=username</i>	None

Defaults

Positional Qualifiers

<i>/BLOCK</i>	<i>/TEXT</i>
<i>/EIGHTBIT=option</i>	<i>/EIGHTBIT=LEAVE</i>
<i>/ENCODING=encoding</i>	None
<i>/FILENAME=name</i>	<i>/NOFILENAME</i>

Defaults

/RECORD
/TEXT

/TEXT
/TEXT

PARAMETERS

file-spec[,...]

Optional list of one or more files to send. If */INSERT* is specified, then these files will be sent as attachments to a message which you input from the keyboard.

DESCRIPTION

The SEND command originates a mail message to one or more recipients. If you supply one or more file names, then those files will be sent as the message. If in addition to supplying file names, you specify the */INSERT* qualifier, then the files will be sent as attachments to a message which you enter from the keyboard.

Normally, you will just be prompted for a list of To: recipients and a Subject: line. Use the */CC* or */BCC* if you wish to also be prompted for Cc: (carbon copy) or Bcc: (blind carbon copy) recipients. If you have previously issued the SET CC_PROMPT command, then you will be automatically prompted for Cc: recipients.

After you have entered both the addresses of the recipients and the subject line, you are prompted to enter the message. After you have composed the message, type CTRL/Z. When CTRL/Z is entered, the message is sent; no other action is required by you. If you used the */EDIT* qualifier, then your editor will be invoked and you can compose the message from within the editor. After composing the message, save it, and then exit the editor. Upon exiting the editor, the message is sent.

To abort a message send, enter CTRL/C. If you are entering the message from an editor then, to abort the send, exit the editor without saving your message.

QUALIFIERS

/ABORT
/IGNORE

The */ABORT* qualifier causes the message send to fail if any of the To:, Cc:, or Bcc: addresses prove to be illegal. The */IGNORE* qualifier permits the message to be sent provided that at least one of the addresses is legal. The illegal addresses are ignored and will not appear in the message's header. The default behavior, if neither the */ABORT* or */IGNORE* qualifier is specified, is to prompt you if any of the addresses are illegal. You will be given the choice of whether to cancel the send or to go ahead and send the message to just the legal addresses.

/BCC
/BCC_LIST=address[,...]
/BCC_PROMPT

PMDF MAIL commands

SEND

/NOBCC_PROMPT

By default, you are prompted for Bcc: (blind carbon copy) addresses only when you specify either the /BCC or /BCC_PROMPT qualifier. If you specify /BCC_PROMPT, you will be presented with a “Bcc:” prompt to which you may specify zero or more Bcc: addresses. Specifying /NOBCC_PROMPT inhibits Bcc: prompting. You may use the /BCC_LIST qualifier to specify one or more Bcc: addresses in the SEND command line itself.

The /BCC qualifier is an abbreviation for /BCC_PROMPT.

/COMMENTS=comment

/NOCOMMENTS

Normally, a Comments: header line is generated only when you have defined the PMDF_COMMENTS logical. If you specify /NOCOMMENTS, then that logical will not be used and no Comments: line will be added to the message. If, instead, you specify a comment with the /COMMENTS qualifier, then that comment will be placed on a Comments: header line, and PMDF_COMMENTS, if defined, will be ignored.

/CC

/CC_LIST=address[,...]

/CC_PROMPT

/NOCC_PROMPT

By default, you are prompted for Cc: (carbon copy) addresses only when you have previously used the SET CC_PROMPT command. The /CC_LIST, /CC_PROMPT, and /NOCC_PROMPT qualifiers override this behavior.

If you specify the /CC_PROMPT qualifier, you will be presented with a “Cc:” prompt to which you may specify zero or more Cc: addresses. Specifying /NOCC_PROMPT inhibits Cc: prompting. You may use the /CC_LIST qualifier to specify one or more Cc: addresses on the SEND command line itself.

The /CC qualifier is an abbreviation for /CC_PROMPT.

/CONFIRM

/NOCONFIRM (default)

When /CONFIRM is specified, you will be prompted to confirm the inclusion of each selected message in the message digest.

/DELAY_WARNING (default)

/NODELAY_WARNING

The qualifier controls whether or not PMDF requests that delay notifications be sent in case this message is not delivered immediately. The default is that PMDF requests delay notifications. However, note that some remote mailers may not support sender specification of whether delay notifications be sent and may unconditionally do one or the other regardless of whatever you request.

/DELIVERY_RECEIPT[=keyword]

/NODELIVERY_RECEIPT

Normally, a Delivery-receipt-to: header line is generated only when you have defined the PMDF_DELIVERY_RECEIPT logical. If you specify /NODELIVERY_RECEIPT, then no Delivery-receipt-to: line will be generated. If, instead, you specify the /DELIVERY_RECEIPT qualifier, then a delivery receipt will be requested of all recipients of the message, and the PMDF_DELIVERY_RECEIPT logical, if defined, will be ignored. One of the keywords HEADER, NOTARY,

or BOTH may optionally be specified to control what style of delivery receipt to construct (header style, NOTARY envelope style, or both, respectively).

/DIGEST=number[,...]

/NODIGEST (default)

Send the specified messages as a MIME message digest. One or more messages may be specified via their message numbers. Ranges are permitted: */DIGEST=(1,3,6-9,15-20)* specifies messages 1, 3, 6 through 9, and 15 through 20.

/EDIT[=option]

/NOEDIT (default)

To compose your message from within an editor, specify the */EDIT* qualifier. The */NOEDIT* qualifier prevents an editor from being invoked. By default, an editor is only invoked if, when you ran PMDF MAIL, you specified the qualifier */EDIT=(SEND)*.

By default the message's RFC 822 header will also appear in the editor. To suppress the presentation of the RFC 822 header, specify */EDIT=NOHEADER*. To request that the header appear in the editor, specify */EDIT=HEADER*.

/ENCAPSULATE (default)

/NOENCAPSULATE

Specify whether or not to treat input files specified with the optional **file-spec** parameter as separate attachments each encapsulated as a separate message body part.

/FROM=address

/NOFROM

When you specify */NOFROM*, the *PMDF_FROM* logical is ignored and a standard From: header line containing your address is generated. When you use */FROM*, the specified address is then used to construct the From: header line, and your real (authenticated) address is placed in a Sender: header line.

/INSERT

/NOINSERT

The */INSERT* qualifier instructs PMDF MAIL to prompt you for additional message text and insert it as an attachment to the message. The additional text, which is composed by hand either through an editor or in response to the "Enter your message below" prompt, appears at the top of the message with any attached files appended afterwards.

/LAST

/NOLAST (default)

The */LAST* qualifier causes the content of the last message you sent to be used as the content for this message; *i.e.*, resends the previous message. */NOLAST* selects the default behavior in which you are expected to generate the content of the message yourself.

/MULTIPLE

/SINGLE (default)

By default, you are prompted only once for each type of recipient address, To:, Cc:, and Bcc:. If you specify */MULTIPLE*, then you will be prompted repeatedly for each of these address types. For each type, the prompt will repeat until you enter a blank line. */SINGLE* selects the default behavior.

PMDF MAIL commands

SEND

/PERSONAL_NAME=name

/NOPERSONAL_NAME

The */PERSONAL_NAME* and */NOPERSONAL_NAME* qualifiers override the setting of the SET PERSONAL_NAME command. When you use the */PERSONAL_NAME* qualifier, then the specified name will be used in the personal name field of your return address which appears in the From: header line of your message. Specifying */NOPERSONAL_NAME* prevents any personal name from appearing in your return address.

/PRIORITY=priority

/NOPRIORITY

Normally, a Priority: header line is generated only when you have defined the PMDF_PRIORITY logical. If you specify */NOPRIORITY*, then no Priority: line will be generated. If, instead, you specify the */PRIORITY* qualifier, then the supplied priority will be included in a Priority: header line. The legal priorities are: NO-PRIORITY, THIRD-CLASS, SECOND-CLASS, NON-URGENT, NORMAL, and URGENT. NO-PRIORITY is equivalent to */NOPRIORITY*.

/READ_RECEIPT

/NOREAD_RECEIPT

Normally, a Read-receipt-to: header line is generated only when you have defined the PMDF_READ_RECEIPT logical. If you specify */NOREAD_RECEIPT*, then no Read-receipt-to: line will be generated. If, instead, you specify the */READ_RECEIPT* qualifier, then a read receipt will be requested of all recipients of the message, and any address specified by the PMDF_READ_RECEIPT logical will be ignored.

/REMOVE

/NOREMOVE (default)

When */REMOVE* is specified, your address will be removed from the list of recipients even if you explicitly specified your address as a To:, Cc:, or Bcc: address list or have */COPY_SELF* enabled for sending. Your address will appear in the Cc: list if you specify */SELF*.

/REPLY_TO=address

/NOREPLY_TO

Normally, a Reply-to: header line is generated only when you have defined the PMDF_REPLY_TO logical. If you specify */NOREPLY_TO*, then no Reply-to: line will be generated. If, instead, you specify the */REPLY_TO* qualifier, then the supplied address will be placed in a Reply-to: header line, and any PMDF_REPLY_TO logical ignored.

/RETURN_CONTENT (default)

/NORETURN_CONTENT

These qualifiers control whether return-of-content is requested for non-delivery reports.

/SELF

/NOSELF

The */SELF* and */NOSELF* qualifiers override the behavior of the SET COPY_SELF command. */SELF* causes a copy of your message to be sent to you; your address will appear in the Cc: header line. When */NOSELF* is specified, you will not receive a copy of the message unless you explicitly include your address in the To:, Cc:, or Bcc: address lists.

/SENSITIVITY=sensitivity

/NOSENSITIVITY

Normally, a Sensitivity: header line is generated only when you have defined the PMDF_SENSITIVITY logical. If you specify /NOSENSITIVITY, then no Sensitivity: line will be generated. If, instead, you specify the /SENSITIVITY qualifier, then the supplied sensitivity will be included in a Sensitivity: header line. The legal sensitivities are: NOT-SENSITIVE, PERSONAL, PRIVATE, and COMPANY-CONFIDENTIAL. NOT-SENSITIVE is equivalent to /NOSENSITIVITY.

/SIGNATURE=signature-spec

/NOSIGNATURE

Normally, signature lines are appended to the end of your message only if the PMDF_SIGNATURE logical is defined. When you specify /NOSIGNATURE, no signature lines are appended to your message. When, however, you specify the /SIGNATURE qualifier, then the specified signature is appended to your message. If **signature-spec** begins with an at-sign, @, then the signature lines are copied from the file name following the at-sign; otherwise, **signature-spec** itself is appended to the end of the message.

/SUBADDRESS=subaddress

Attaches a subaddress to your return address.

/SUBJECT=subject

/NOSUBJECT

By default, you will be prompted to supply a Subject: line. /NOSUBJECT suppresses this prompt; no Subject: line will appear in the message. To specify a subject on the SEND command line, use the /SUBJECT qualifier.

/TO

/TO_LIST=address[,...]

/TO_PROMPT (default)

/NOTO_PROMPT

By default, you are prompted for the To: addresses to which to send the message. The /NOTO_PROMPT qualifier suppresses this prompting. You may use the /TO_LIST qualifier to specify one or more To: addresses on the SEND command line itself.

The /TO qualifier is an abbreviation for /TO_PROMPT.

/USER=username

Send the message as though you are the specified user; that is, the From: address in the message will be that of the specified user. No Sender: header line is added. Use of this qualifier requires either WORLD privilege or the PMDF_WORLD or PMDF_WORLD_username rightslist identifier.

The /USER qualifier is intended for use by postmasters. It comes in handy when you need to unsubscribe a user from a remote mailing list. WORLD privilege is required to use this qualifier. /NOPERSONAL_NAME is implied when /USER is specified.

PMDF MAIL commands

SEND

POSITIONAL QUALIFIERS

/BLOCK
/RECORD
/TEXT

The ***/BLOCK***, ***/RECORD***, and ***/TEXT*** positional qualifiers may only be used in conjunction with an input file specification. These qualifiers allow you to override the default file reading (access) mode which PMDF would otherwise use to read the input file.

Typically, PMDF uses ***/TEXT***.

/EIGHTBIT=option
/NOEIGHTBIT

Specify how to handle eight bit characters in an input file (*i.e.*, characters for which the eighth bit is set). The available options are:

HEXIFY	Replace each eight bit character with =XX where "XX" is the character's ordinal value expressed in hexadecimal.
LEAVE	Leave eight bit characters untouched. This is the default behavior.
REMOVE	Remove eight bit characters from the message; removed characters are not replaced with anything to indicate their removal or former presence.
REPLACE	Replace each eight bit character with a question mark, "?".
STRIP	Clear the eighth bit in each character of the message; <i>i.e.</i> , "strip" the eighth bit from eight bit characters.

The default behavior is ***/EIGHTBIT=LEAVE***. Use ***/NOEIGHTBIT*** or ***/EIGHTBIT=REMOVE*** to remove all eight bit characters from input files.

/ENCODING=encoding

The ***/ENCODING*** positional qualifier may only be used in conjunction with an input file specification. The ***/ENCODING*** qualifier allows you to override the default file encoding method which PMDF would otherwise use to encode the input file. The legal encoding types are: NONE, 8BIT, 7BIT, BASE32, BASE64, BASE85, BINHEX, BTOA, HEXADECEMIAL, OLD-BASE64 (for use with PMDF V4.0), PATHWORKS, QUOTED-PRINTABLE, UUENCODE, COMPRESSED-BASE64, and COMPRESSED-UUENCODE.

/FILENAME=name
/NOFILENAME (default)

The ***/FILENAME*** and ***/NOFILENAME*** positional qualifiers may only be used in conjunction with an input file specification. When an input file is attached as a separate message body part, that part's Content-type: header line will, by default, omit the optional file name parameter. This default behavior is explicitly selected with the ***/NOFILENAME*** qualifier. When ***/FILENAME*** is specified, the name of the input file will be included in the Content-type: header line. If no value is specified on the ***/FILENAME*** qualifier, then the name of the input file is used.

EXAMPLES

1 EMAIL> SEND
To: Mrochek
Subject: Weekly staff meeting?
Enter your message below. Press CTRL/Z when complete, or CTRL/C to quit:
Did I hear correctly that the weekly staff meeting is cancelled this week?

Fresnel
[CTRL/Z]
EMAIL>

In this example, a simple message is sent to Mrochek.

2 EMAIL> SEND/CC
To: Mrochek
Cc: Beckett, Misha@example.com, Rex@example.com
Subject: Weekly staff meeting?
Enter your message below. Press CTRL/Z when complete, or CTRL/C to quit:
Did I hear correctly that the weekly staff meeting is cancelled this week?

Fresnel

P.S. I copied Beckett, Misha, and Rex on this message since they're confused too.
[CTRL/Z]
EMAIL>

Here, a message is sent to Mrochek. Beckett, Misha@example.com, and Rex@example.com are also copied on the message; they will each receive a copy of the message and their addresses will appear in a Cc: header line.

3 EMAIL> SEND/BCC
To: Mrochek
Bcc: Beckett
Subject: Weekly staff meeting?
Enter your message below. Press CTRL/Z when complete, or CTRL/C to quit:
Did I hear correctly that the weekly staff meeting is cancelled this week?

Fresnel
[CTRL/Z]
EMAIL>

In this example, the /BCC qualifier is used and Beckett is specified as a Bcc: recipient. This means that Beckett will receive a copy of the message. However, Mrochek's copy will not indicate this; that is, Beckett's address will not appear in the copy of the message sent to Mrochek.

4 EMAIL> SEND/EDIT
To: Mrochek
Subject: Weekly staff meeting?
[the editor is invoked]
[compose your message]
[save the message]
[exit the editor]
EMAIL>

This sample shows how to invoke the editor and compose your message from within it.

PMDf MAIL commands

SEND

```
5 EMAIL> SEND/EDIT/LAST
To: Beckett
Subject: Weekly staff meeting?
[the editor is invoked]
[edit the previous message]
[save the edited message]
[exit the editor]
EMAIL>
```

This sample shows how to resend your last message after first editing it.

```
6 EMAIL> SEND LETTER.TXT
To: Rex@example.com
Subject: Greetings
EMAIL>
```

Here, the contents of the file LETTER.TXT are sent as a message to Rex@example.com.

```
7 EMAIL> SEND/INSERT BONE.DAT
To: Misha@example.com
Subject: Best bones
Enter your message below. Press CTRL/Z when complete, or CTRL/C to quit:
Misha,
Attached below, please find my summary compilation on the best bone buys
in town.

                                Mrochek

[CTRL/Z]
EMAIL>
```

In this example, a message with a file attachment is sent to Misha@example.com. The file BONE.DAT is attached to the input text and the two sent as a single message to Misha@example.com.

SET/LOG

SYNTAX /LOG

DESCRIPTION

The /LOG qualifier causes a status message to be displayed for each profile record which is updated with the SET command.

EXAMPLES

In this example, the user BOB elects to store his mail files in the subdirectory [.MAIL]. So as to monitor the activity of the SET MAIL_DIRECTORY command, the /LOG qualifier is specified.

```
EMAIL> SET MAIL_DIRECTORY/LOG [.MAIL]
%EMAIL-S-CREATED, D1:[BOB.MAIL] created
%EMAIL-S-RENAMED, D1:[BOB]MAIL.MAI;1 renamed to D1:[BOB.MAIL]MAIL.MAI;1
%EMAIL-S-RENAMED, D1:[BOB]MAIL$03C813CD00050095.MAI;1 renamed to
    D1:[BOB.MAIL]MAIL$03C813CD00050095.MAI;1
EMAIL>
```

SET/UIC & SHOW/UIC

SYNTAX **/UIC="[g,m]"**

DESCRIPTION

When the /UIC qualifier is used, the entire profile database is scanned looking for usernames which correspond to the specified UIC. An asterisk wildcard, *, may be specified for either or both of the group (g) or member (m) numbers. The /UIC and /USER qualifiers may be used in the same command. In such a case, a profile entry must match both the UIC and username specifications.

In the case of the SHOW command, only matches found with a non-default setting are displayed. Use the /ALL qualifier to display all matches.

In the case of the SET command, the specified setting is made for each match found in the profile database.

EXAMPLES

In this example, the editor is set to TPU for the entire UIC group 1123.

```
EMAIL> SET EDITOR/UIC=[1123,*]/LOG TPU
%EMAIL-S-MODRECORD, ASMITH record modified
%EMAIL-S-MODRECORD, AWART record modified
.
.
.
%EMAIL-I-MODRECORDS, 234 records modified
EMAIL> SHOW EDITOR/UIC="[1123,*]"
Username                               Editor
ASMITH                                 TPU
AWART                                  TPU
.
.
.
EMAIL>
```

SET/USER & SHOW/USER

SYNTAX **/USER=username**

DESCRIPTION

The `/USER` qualifier specifies which username from the profile database to act upon. If the username contains wild cards, then the entire profile database is scanned looking for usernames which match. The `/UIC` and `/USER` qualifiers may be used in the same command. In such a case, a profile entry must match both the UIC and username specifications.

In the case of the `SHOW` command, only matches found with a non-default setting are displayed. Use the `/ALL` qualifier to display all matches.

In the case of the `SET` command, the specified setting is made for each match found in the profile database.

EXAMPLES

In this example, forwarding is set up for the fictitious user `SYSTEM-LIST`. This allows mail to be sent to `SYSTEM-LIST` and have it automatically forwarded to `managers@example.com`.

```
EMAIL> SET FORWARD/USER=SYSTEM-LIST managers@example.com
EMAIL> SHOW FORWARD/USER=SYSTEM-LIST
SYSTEM-LIST has mail forwarded to IN%"managers@example.com"
EMAIL>
```

PMDF MAIL commands

SHOW/ALL

SHOW/ALL

SYNTAX /ALL

DESCRIPTION

The /ALL qualifier indicates that if an entry for a field does not exist in the profile database then to display the default value for that entry. The /ALL qualifier is only effective when used in conjunction with SHOW/UIC or SHOW/USER.

SET & SHOW APPLICATION_COMMAND

Controls the DCL command used to display MIME application type body parts.

restrictions Requires SYSPRV privilege to set information for users other than yourself; requires SYSPRV or SYSNAM privilege to show information about users other than yourself.

SYNTAX **SET APPLICATION_COMMAND** *command*
SET NOAPPLICATION_COMMAND
SHOW APPLICATION_COMMAND

Qualifiers	Defaults
/ALL	/NOALL
/LOG	/NOLOG
/UIC="[g,m]"	None
/USER=username	None

PARAMETERS

command
DCL command to use to display an application.

DESCRIPTION

The SET and SHOW APPLICATION_COMMAND commands control how PMDF MAIL displays MIME messages containing parts labelled as type application (*e.g.*, word processing documents, PostScript files, DDIF files, *etc.*).

PMDF MAIL has its own procedures for displaying applications. You may override these procedures with the SET APPLICATION_COMMAND. With this command, you specify a DCL command which accepts five parameters: (1) the message content type (always APPLICATION), (2) the message content subtype, (3) the name of the file containing the data to display, (4) a title to show, if possible, when displaying the application, and (5) whether or not to delete the file after displaying it (DELETE or NODELETE). The specified DCL command will then be executed from a subprocess each time an application is to be displayed; the parameters (1) — (5) will be provided by PMDF MAIL.

To undo a setting made with SET APPLICATION_COMMAND, use SET NOAPPLICATION_COMMAND. The current setting, if any, may be queried with SHOW APPLICATION_COMMAND.

PMDF MAIL commands

SET & SHOW APPLICATION_COMMAND

EXAMPLES

Suppose that the following command procedure D1:[BOB]APPL.COM has been developed to display applications:

```
$ set noverify
$ set noon
$ !
$ ! D1:[BOB]APPL.COM -- Display a message part of type APPLICATION
$ !
$ ! P1 = content type      (always "APPLICATION")
$ ! P2 = content subtype  (accept DDIF/DIVA/DOTS/DTIF & POSTSCRIPT)
$ ! P3 = file name        (file containing application data to display)
$ ! P4 = title            (we ignore this)
$ ! P5 = DELETE/NODELETE
$ !
$ P2 = F$EDIT (P2, "UPCASE")
$ if "POSTSCRIPT" .eqs. P2 then goto PS
$ if "DDIF"       .eqs. P2 then goto CDA
$ if "DIVA"       .eqs. P2 then goto CDA
$ if "DOTS"       .eqs. P2 then goto CDA
$ if "DTIF"       .eqs. P2 then goto CDA
$ write sys$output "Unrecognized content type/subtype: 'P1'/'P2'"
$ goto DONE
$ !
$ PS:
$   VIEW/INTERFACE=DECWINDOWS 'P3'/FORMAT=PS
$   goto DONE
$ CDA:
$   if P2 .nes. "DTIF" then P2 = "DDIF"
$   VIEW/INTERFACE=DECWINDOWS 'P3'/FORMAT='P2'
$   goto DONE
$ DONE:
$   if f$edit (P5, "UPCASE") .eqs. "DELETE" then delete/nolog 'P3';
$   exit
```

To instruct PMDF MAIL to use this procedure to display message parts of type APPLICATION, issue the following command:

```
EMAIL> SET APPLICATION_COMMAND "@D1:[BOB]APPLICATION.COM"
EMAIL> SHOW APPLICATION_COMMAND
Application viewing command is "@D1:[BOB]APPLICATION.COM".
EMAIL>
```

SET & SHOW APPLICATION_PROMPT

Controls whether or not you are prompted before a message part of type application is displayed.

restrictions Requires SYSPRV privilege to set information for users other than yourself; requires SYSPRV or SYSNAM privilege to show information about users other than yourself.

SYNTAX **SET APPLICATION_PROMPT**
 SET NOAPPLICATION_PROMPT
 SHOW APPLICATION_PROMPT

Qualifiers	Defaults
/ALL	/NOALL
/LOG	/NOLOG
/UIC="[g,m]"	None
/USER=username	None

PARAMETERS *None.*

DESCRIPTION

The SET and SHOW APPLICATION_PROMPT commands control whether or not you are prompted before any message part of type application is displayed. The prompt asks you whether or not the part should be displayed. If you answer in the affirmative, then it will be displayed; otherwise, it will be skipped and the remainder of the message, if any, presented.

By default, application parts are displayed without your prior approval. To require that you be prompted beforehand, issue the SET APPLICATION_PROMPT command:

```
EMAIL> SET APPLICATION_PROMPT
EMAIL> SHOW APPLICATION_PROMPT
Application display prompting is enabled.
EMAIL>
```

To restore the default behavior, use the SET NOAPPLICATION_PROMPT command:

```
EMAIL> SET NOAPPLICATION_PROMPT
EMAIL> SHOW APPLICATION_PROMPT
Application display prompting is disabled.
EMAIL>
```

PMDF MAIL commands

SET & SHOW APPLICATION_WAIT

SET & SHOW APPLICATION_WAIT

Controls whether or not PMDF MAIL waits for a spawned application viewing process to terminate.

restrictions Requires SYSPRV privilege to set information for users other than yourself; requires SYSPRV or SYSNAM privilege to show information about users other than yourself.

SYNTAX **SET APPLICATION_WAIT**
 SET NOAPPLICATION_WAIT
 SHOW APPLICATION_WAIT

Qualifiers	Defaults
/ALL	/NOALL
/LOG	/NOLOG
/UIC="[g,m]"	None
/USER=username	None

PARAMETERS *None.*

DESCRIPTION

When PMDF MAIL displays a message part of type "application", a subprocess is created to display the message part. By default, PMDF MAIL will not wait for the subprocess to terminate, thus allowing you to continue reading your mail while the application is displayed.

Issue the command `SET APPLICATION_WAIT` to instruct PMDF MAIL to always wait for the viewing subprocess to terminate prior to continuing. Use the command `SET NOAPPLICATION_WAIT` to inhibit waiting on the subprocess.

EXAMPLES

To cause PMDF MAIL to display an application and then wait for the application viewer to finish, issue the command `SET NOAPPLICATION_WAIT`:

```
EMAIL> SET NOAPPLICATION_WAIT
EMAIL> SHOW APPLICATION_WAIT
Application display waiting is enabled.
EMAIL>
```

This will prevent, for instance, cases where the application viewer's output becomes interspersed with output from PMDF MAIL on your terminal screen.

SET & SHOW AUDIO_COMMAND

Controls the DCL command used to playback MIME audio type body parts.

restrictions Requires SYSPRV privilege to set information for users other than yourself; requires SYSPRV or SYSNAM privilege to show information about users other than yourself.

SYNTAX **SET AUDIO_COMMAND** *command*
SET NOAUDIO_COMMAND
SHOW AUDIO_COMMAND

Qualifiers	Defaults
/ALL	/NOALL
/LOG	/NOLOG
/UIC="[g,m]"	None
/USER=username	None

PARAMETERS

command
DCL command to use to playback and audio file.

DESCRIPTION

The SET and SHOW AUDIO_COMMAND commands control how PMDF MAIL plays back MIME messages containing parts labelled as type audio (e.g., audio files).

PMDF MAIL has its own procedures for replaying audio messages. You may override these procedures with the SET AUDIO_COMMAND. With this command, you specify a DCL command which accepts six parameters: (1) the message content type (always AUDIO), (2) the message content subtype, (3) the name of the file containing the audio data, (4) a title to show, if desired, when replaying the audio data, (5) whether or not to delete the file after displaying it (DELETE or NODELETE), and (6) the user's preferred audio device as selected with the SET AUDIO_DEVICE command. The specified DCL command will then be executed from a subprocess each time an application is to be displayed; the parameters (1) — (6) will be provided by PMDF MAIL.

To undo a setting made with SET AUDIO_COMMAND, use SET NOAUDIO_COMMAND. The current setting, if any, may be queried with SHOW AUDIO_COMMAND.

PMDF MAIL commands

SET & SHOW AUDIO_COMMAND

EXAMPLES

Suppose that the following command procedure D1:[BOB]AUDIO.COM has been replay audio files:

```
$ set noverify
$ set noon
$ !
$ ! D1:[BOB]APPL.COM -- Display a message part of type APPLICATION
$ !
$ ! P1 = content type      (always "AUDIO")
$ ! P2 = content subtype  (accept BASIC and DDIF/DIVA)
$ ! P3 = file name        (file containing application data to display)
$ ! P4 = title            (we ignore this)
$ ! P5 = DELETE/NODELETE
$ ! P6 = audio device
$ !
$ P2 = F$EDIT (P2, "UPCASE")
$ if "BASIC" .eqs. P2 then goto BASIC
$ if "DDIF" .eqs. P2 then goto DDIF
$ if "DIVA" .eqs. P2 then goto DIVA
$ write sys$output "Unrecognized content type/subtype: ''P1''/'P2'"
$ goto DONE
$ !
$ DDIF:
$ DIVA:
$   VIEW/INTERFACE=DECWINDOWS 'P3'/FORMAT=DDIF
$   goto DONE
$ BASIC:
$   SET COMMAND D1:[BOB.TOOLS]AUDIO.CLD
$   AUDIO PLAY/DEVICE='P6' 'P3'
$   goto DONE
$ DONE:
$   if f$edit (P5, "UPCASE") .eqs. "DELETE" then delete/nolog 'P3';
$   exit
```

To instruct PMDF MAIL to use this procedure to display message parts of type APPLICATION, issue the following command:

```
EMAIL> SET AUDIO_COMMAND "@D1:[BOB]AUDIO.COM"
EMAIL> SHOW AUDIO_COMMAND
Application viewing command is "@D1:[BOB]AUDIO.COM".
EMAIL>
```

SET & SHOW AUDIO_DEVICE

Controls the output device to which audio data is directed.

restrictions Requires SYSPRV privilege to set information for users other than yourself; requires SYSPRV or SYSNAM privilege to show information about users other than yourself.

SYNTAX **SET AUDIO_DEVICE** *device*
 SET NOAUDIO_DEVICE
 SHOW AUDIO_DEVICE

Qualifiers	Defaults
/ALL	/NOALL
/LOG	/NOLOG
/UIC="[g,m]"	None
/USER=username	None

PARAMETERS

device
Device to which to direct audio data.

DESCRIPTION

The SET and SHOW AUDIO_DEVICE commands control which device audio data is directed to in order to play back audio messages and files. By default, all audio data is directed to the device _SOA0:. To select, for instance, the device AUD0:, issue the command

```
EMAIL> SET AUDIO_DEVICE AUD0:  
EMAIL> SHOW AUDIO_DEVICE  
Audio device is AUD0:.  
EMAIL>
```

To undo a setting made with SET AUDIO_DEVICE, use SET NOAUDIO_DEVICE. This will restore the setting to the default, _SOA0:. The current setting, if any, may be queried with SHOW AUDIO_DEVICE.

SET & SHOW AUDIO_PROMPT

Controls whether or not you are prompted before a message part of type audio is played.

restrictions Requires SYSPRV privilege to set information for users other than yourself; requires SYSPRV or SYSNAM privilege to show information about users other than yourself.

SYNTAX **SET AUDIO_PROMPT**
 SET NOAUDIO_PROMPT
 SHOW AUDIO_PROMPT

Qualifiers	Defaults
/ALL	/NOALL
/LOG	/NOLOG
/UIC="[g,m]"	None
/USER=username	None

PARAMETERS *None.*

DESCRIPTION

The SET and SHOW AUDIO_PROMPT commands control whether or not you are prompted before any message part of type audio is played. If you answer in the affirmative, then it will be played; otherwise, it will be skipped and the remainder of the message, if any, presented.

By default, audio parts are only played after first prompting you for permission to do so. If you wish to bypass this prompting and always play audio parts, issue the SET NOAUDIO_PROMPT command:

```
EMAIL> SET NOAUDIO_PROMPT
EMAIL> SHOW AUDIO_PROMPT
Audio playback prompting is disabled.
EMAIL>
```

To restore the default behavior, use the SET AUDIO_PROMPT command:

```
EMAIL> SET AUDIO_PROMPT
EMAIL> SHOW AUDIO_PROMPT
Audio playback prompting is enabled.
EMAIL>
```

SET & SHOW AUDIO_WAIT

Controls whether or not PMDF MAIL waits for a spawned audio playback process to terminate.

restrictions Requires SYSPRV privilege to set information for users other than yourself; requires SYSPRV or SYSNAM privilege to show information about users other than yourself.

SYNTAX

SET AUDIO_WAIT
SET NOAUDIO_WAIT
SHOW AUDIO_WAIT

Qualifiers	Defaults
/ALL	/NOALL
/LOG	/NOLOG
/UIC="[g,m]"	None
/USER=username	None

PARAMETERS *None.*

DESCRIPTION

When an audio playback command has been set and PMDF MAIL replays an audio message part, a subprocess is created to execute the audio playback command. By default, PMDF MAIL will not wait for the subprocess to terminate, thus allowing you to continue reading your mail while the message is replayed.

Issue the command SET AUDIO_WAIT to instruct PMDF MAIL to always wait for the playback subprocess to terminate prior to continuing. Use the command SET NOAUDIO_WAIT to inhibit waiting on the subprocess.

EXAMPLES

To cause PMDF MAIL to wait while replaying an audio message, issue the command SET NOAUDIO_WAIT:

```
EMAIL> SET NOAUDIO_WAIT
EMAIL> SHOW AUDIO_WAIT
Audio playback waiting is enabled.
EMAIL>
```

This will prevent, for instance, cases where multiple audio message parts are read in quick succession and played back at the same time.

PMDF MAIL commands

SET & SHOW AUTO_NEWMAIL

SET & SHOW AUTO_NEWMAIL

Controls whether or not read new messages are refiled to the MAIL folder.

restrictions Requires SYSPRV privilege to set information for users other than yourself; requires SYSPRV or SYSNAM privilege to show information about users other than yourself.

SYNTAX

SET AUTO_NEWMAIL
SET NOAUTO_NEWMAIL
SHOW AUTO_NEWMAIL

Qualifiers	Defaults
/ALL	/NOALL
/LOG	/NOLOG
/UIC="[g,m]"	None
/USER=username	None

PARAMETERS *None.*

DESCRIPTION

By default, after reading a new mail message in your default mail file, that message is marked as being read and refiled to the MAIL folder. To request that read new messages be left in the NEWMAIL folder, issue the command

```
EMAIL> SET NOAUTO_NEWMAIL
EMAIL> SHOW AUTO_NEWMAIL
Read new mail messages will be left in the NEWMAIL folder.
```

Use the SET AUTO_NEWMAIL command to restore the default behavior.

You can use the MARK/NOREAD command to mark messages as being new (unread).

SET & SHOW AUTO_PURGE

Controls whether or not your wastebasket folder is purged when you exit PMDF MAIL.

restrictions Requires SYSPRV privilege to set information for users other than yourself; requires SYSPRV or SYSNAM privilege to show information about users other than yourself.

SYNTAX

SET AUTO_PURGE
SET NOAUTO_PURGE
SHOW AUTO_PURGE

Qualifiers	Defaults
/LOG	/NOLOG
/UIC="[g,m]"	None
/USER=username	None

PARAMETERS *None.*

DESCRIPTION

When you exit PMDF MAIL with the EXIT command while your default mail file is open, your wastebasket folder will be purged. You can prevent this from occurring by instead using the QUIT command, or by issuing a SET NOAUTO_PURGE command. The benefit to using the SET NOAUTO_PURGE command is that you only need to use that command once — the setting will be remembered.

```
EMAIL> SET NOAUTO_PURGE
EMAIL> SHOW AUTO_PURGE
Automatic deleted message purge is disabled.
```

Use the SET AUTO_PURGE command to restore the default behavior.

SET & SHOW CC_PROMPT

Controls whether or not you are prompted for a cc: address when sending mail.

restrictions Requires SYSPRV privilege to set information for users other than yourself; requires SYSPRV or SYSNAM privilege to show information about users other than yourself.

SYNTAX **SET CC_PROMPT**
 SET NOCC_PROMPT
 SHOW CC_PROMPT

Qualifiers	Defaults
/LOG	/NOLOG
/UIC="[g,m]"	None
/USER=username	None

PARAMETERS *None.*

DESCRIPTION

When you send a mail message, you ordinarily have to specify the /CC qualifier in order to be prompted for cc: addresses. With the SET CC_PROMPT command, you request that you automatically be prompted for Cc: addresses when sending mail.

EXAMPLES

In the following example, default cc: prompting is enabled with the SET CC_PROMPT command.

```
EMAIL> SET CC_PROMPT
EMAIL> SHOW CC_PROMPT
CC prompting is enabled.
EMAIL> SEND
To: BOB
Cc: SUE,BETTY
Subject:
.
.
.
```

SET & SHOW CONTROL_CHARS

Controls the handling of control and escape characters in message text.

restrictions Requires SYSPRV privilege to set information for users other than yourself; requires SYSPRV or SYSNAM privilege to show information about users other than yourself.

SYNTAX **SET CONTROL_CHARS** *handling*
SHOW CONTROL_CHARS

Qualifiers	Defaults
/LOG	/NOLOG
/UIC="[g,m]"	None
/SYSTEM_DEFAULT	None
/USER=username	None

PARAMETERS *None.*

DESCRIPTION

By default, control characters and escape sequences in message headers and text are passed through to your terminal thereby allowing the display of non-ASCII character sets requiring such sequences. However, there is the potential for harm to be done by such characters and sequences. By issuing the command

```
EMAIL> SET CONTROL_CHARS DISABLE
```

PMDF MAIL will disable and convert to printable text any control characters or escape sequences in message headers and text which it displays upon your terminal. Be warned, however, that the actual content of the message is not changed. Should you extract the message to a file and then type it out, then any control characters and escape sequences will be passed through to your terminal. What may have seemed to be a safe message when you read it from PMDF MAIL, may in fact be unsafe to extract and type out while at DCL.

Use the command

```
EMAIL> SET CONTROL_CHARS ALLOW
```

to allow control and escape characters to be passed through to your terminal.

Note that certain control characters such as CTRL/S (XOFF) are never passed through to your terminal by PMDF MAIL.

PMDF MAIL commands

SET & SHOW CONTROL_CHARS

EXAMPLES

In this example, control and escape sequences are disabled as shown with the `SHOW` command.

```
EMAIL> SHOW CONTROL_CHARS
Control and escape sequences are passed through to the terminal.
EMAIL> SET CONTROL_CHARACTERS DISABLE
EMAIL> SHOW CONTROL_CHARS
Control and escape sequences are not passed through to the terminal.
EMAIL>
```

SET & SHOW COPY_SELF

Controls whether or not you are automatically copied on messages you send, forward, or reply to.

restrictions Requires SYSPRV privilege to set information for users other than yourself; requires SYSPRV or SYSNAM privilege to show information about users other than yourself.

SYNTAX **SET COPY_SELF** *keyword[,...]*
SHOW COPY_SELF

Qualifiers	Defaults
/LOG	/NOLOG
/UIC="[g,m]"	None
/USER=username	None

PARAMETERS

keyword[,...]

Required list of one or more keywords specifying when to automatically copy yourself and (whether to make the automatic copies `cc: copies` or `bcc: copies`). May be any combination of SEND, NOSEND, FORWARD, NOFORWARD, REPLY, NOREPLY, cc, bcc.

DESCRIPTION

With the `COPY_SELF` command, you specify whether or not you wish to automatically receive a copy of any messages you send with the `SEND` or `MAIL` commands, forward with the `FORWARD`, `REDISTRIBUTE`, or `RESEND` commands, or reply to with the `ANSWER` or `REPLY` commands. The `CC` and `BCC` keywords specify whether the automatic copy should be generated by placing your own address in the list of `Cc: recipients`, or in the list of `Bcc: recipients` for the message; the `cc:` keyword is the default.

EXAMPLES

In the following example, the `COPY_SELF` command is used to specify that you be copied on messages which you send or reply to.

```
EMAIL> SET COPY_SELF SEND,REPLY,NOFORWARD
EMAIL> SHOW COPY_SELF
Automatic copy to yourself on SEND and REPLY.
EMAIL>
```

PMDf MAIL commands

SET & SHOW DATE_FORMAT

SET & SHOW DATE_FORMAT

Control the formatting of dates in directory listings and message displays.

restrictions Requires SYSPRV or SYSNAM privilege to show information about users other than yourself.

SYNTAX

SET DATE_DIRECTORY FORMAT
SET NODATE_DIRECTORY FORMAT
SHOW DATE_DIRECTORY FORMAT

Qualifiers	Defaults
<i>/DAY=option</i>	<i>None</i>
<i>/MONTH=option</i>	<i>None</i>
<i>/SYSTEM_DEFAULT</i>	<i>None</i>
<i>/TEXT=text</i>	<i>None</i>
<i>/TO=option</i>	<i>None</i>
<i>/UIC="[g,m]"</i>	<i>None</i>
<i>/USER=username</i>	<i>None</i>
<i>/YEAR=digits</i>	<i>None</i>

PARAMETERS *None.*

DESCRIPTION

With SET and SHOW DATE_FORMAT commands, you may control the presentation of dates in directory listings generated with the DIRECTORY command and in the folder name, message number, date line shown when each message is displayed. The dates in actual message header lines will not be affected by this command.

The format to use for displaying a date is specified through the use of the /DAY, /MONTH, and /YEAR qualifiers. The order in which those qualifiers appear on the command line designates the order in which the day, month, and year appear in displayed dates. Additional text such as slashes, commas, spaces, *etc.* which is to appear in a date may be specified with the /TEXT qualifier.

By default, the date format specified by any LIB\$DT_FORMAT logical is used. If that logical is not defined, then the default format

```
EMAIL> SET DATE_FORMAT/DAY=NUMERIC=BLANK_FILL/TEXT="- "  
/MONTH=ABBREVIATED=UPPERCASE/TEXT="- "/YEAR
```

is used. In the above example, the command is wrapped onto the second line for typographic reasons; the command must be entered as a single line.

QUALIFIERS

/DAY[=type[=option]]

Specifies the position of the day of the week or month in displayed dates. The accepted types are

ABBREVIATED Display the weekday name, abbreviated to three letters.
ALPHABETIC Display the weekday name.
NUMERIC Display the day of the month.

The ABBREVIATED and ALPHABETIC types accept the options UPPER-CASE, LOWER-CASE, and CAPITALIZED. The NUMERIC type accepts the option BLANK_FILLED, ZERO_FILLED, and NO_FILL.

/MONTH[=type[=option]]

Specifies the position of the month in displayed dates. The accepted types are

ABBREVIATED Display the month name, abbreviated to three letters.
ALPHABETIC Display the month name.
NUMERIC Display the month of the year.

The ABBREVIATED and ALPHABETIC types accept the options UPPER-CASE, LOWER-CASE, and CAPITALIZED. The NUMERIC type accepts the option BLANK_FILLED, ZERO_FILLED, and NO_FILL.

/SYSTEM_DEFAULT

The setting is the system-wide default for users who have not themselves selected a date format with SET DATE_FORMAT. When used with SET NODATE_FORMAT, removes the system-wide default.

/TEXT=text

Specifies text to show in displayed dates.

/YEAR[=digits]

Specifies the position of year in displayed dates. The optional digits value specifies how many digits of the year to display. If not specified, then four digits will be shown.

EXAMPLES

Shown below are several different formattings of the date January 31, 2012 along with the qualifiers to the SET DATE_FORMAT command required to achieve each of the formats shown.

31-JAN-2012	/DAY=NUM=BLANK_FILL/TEXT="-"/MONTH=ABBREV=UPPER/TEXT="-"/YEAR
2012.01.31	/YEAR/TEXT=./MONTH=NUM=ZERO_FILL/TEXT=./DAY=NUM=ZERO_FILL
Jan 31, 2012	/MONTH=ABBREV=CAP/TEXT=" "/DAY=NUM=NO_FILL/TEXT=" "/YEAR
1/31/2012	/MONTH=NUM=NO_FILL/TEXT="/" /DAY=NUM=NO_FILL/TEXT="/" /YEAR
10.01.31	/YEAR=2/TEXT=./MONTH=NUM=ZERO_FILL/TEXT=./DAY=NUM=ZERO_FILL

SET & SHOW DIRECTORY_FORMAT

Control the formatting of directory listings.

restrictions Requires SYSPRV privilege to set information for users other than yourself; requires SYSPRV or SYSNAM privilege to show information about users other than yourself.

SYNTAX **SET DIRECTORY_FORMAT**
 SET NODIRECTORY_FORMAT
 SHOW DIRECTORY_FORMAT

Qualifiers	Defaults
<i>/DATE=(option)</i>	<i>None</i>
<i>/DELETED=(option)</i>	<i>None</i>
<i>/FROM=(option)</i>	<i>None</i>
<i>/ID=(option)</i>	<i>None</i>
<i>/MARKED=(option)</i>	<i>None</i>
<i>/READ=(option)</i>	<i>None</i>
<i>/REPLIED=(option)</i>	<i>None</i>
<i>/SIZE=(option)</i>	<i>None</i>
<i>/SUBJECT=(option)</i>	<i>None</i>
<i>/SYSTEM_DEFAULT</i>	<i>None</i>
<i>/TO=(option)</i>	<i>None</i>
<i>/UIC="[g,m]"</i>	<i>None</i>
<i>/USER=username</i>	<i>None</i>

PARAMETERS *None.*

DESCRIPTION

With SET and SHOW DIRECTORY_FORMAT commands, you may control and rearrange the information displayed in directory listings produced with the DIRECTORY command.

The format to use for each line in a directory listing is specified through the use of the /DATE, /DELETED, /FROM, /ID, /LOG,, /MARKED, /READ, /REPLIED, /SIZE, /SUBJECT, and /TO qualifiers. The order in which those qualifiers appear on the command line designates the order in which the associated information is displayed.

Use the SET NODIRECTORY_FORMAT command to restore the default behavior.

No WIDTH information need be specified for the last field to be displayed; the correct width will automatically be computed.

QUALIFIERS

/DATE[=(option[,...])]

Specifies the position of the message's date of reception in the directory listing. The accepted options are:

COMPRESSED	Display the date in a "compressed" format. If the message was received during the current month then display the day of the month, hour, and minute of its arrival. If it was received in a previous month then display the usual date.
HEADING=text	Heading to display at the top of each screen or page of output.
NOCOMPRESSED	Do not display the date in a compressed format.
SKIP=n	Number of spaces to skip over before displaying the date.
WIDTH=n	Number of characters of the date to display.

Note: If you specify only one option, you may omit the parentheses.

/DELETED[=(option[,...])]

Specifies the position of a flag character denoting whether the message has been deleted or moved. The accepted options are

FLAGS=xy	Two characters: the first specifying the deleted flag and the second the moved flag.
SKIP=n	Number of spaces to skip over before displaying the flag.

/FROM[=option[,...]]

Specifies the position of the messages `TO:` field in the directory listing. The accepted options are

HEADING=text	Heading to display at the top of each screen or page of output.
SKIP=n	Number of spaces to skip over before displaying the From: field.
WIDTH=n	Number of characters of the From: field to display.

If you specify only one option, you may omit the parentheses.

/ID[=(option[,...])]

Specifies the position of the message's identification number in the directory listing. The accepted options are the same as those for the `/FROM` qualifier.

/MARKED[=(option[,...])]

Specifies the position of a flag character denoting whether the message has been marked or not. Uses the same options as `/DELETED`. The `FLAG` option specifies first the character to display when the message is marked and second the character to display when the message is not marked.

/READ[=(option[,...])]

Specifies the position of a flag character denoting whether the message has been read or not. Uses the same options as `/DELETED`. The `FLAG` option specifies first

PMDf MAIL commands

SET & SHOW DIRECTORY_FORMAT

the character to display when the message has been read and second the character to display when the message has not been read.

/REPLIED[=(option[,...])]

Specifies the position of a flag character denoting whether the message has been replied to or not. Uses the same options as `/DELETED`. The `FLAG` option specifies first the character to display when the message has been replied to and second the character to display when the message has not been answered.

/SIZE[=(option[,...])]

Specifies the position of the message's size (in lines) in the directory listing. The accepted options are the same as those for the `/FROM` qualifier.

/SUBJECT[=(option[,...])]

Specifies the position of the message's Subject: field in the directory listing. The accepted options are the same as those for the `/FROM` qualifier.

/SYSTEM_DEFAULT

The setting is the system-wide default for users who have not themselves selected a directory format with `SET DIRECTORY_FORMAT`. When used with `SET NODIRECTORY_FORMAT`, removes the system-wide default.

/TO[=(option[,...])]

Specifies the position of the message's To: field in the directory listing. The accepted options are

`HEADING=text` Heading to display at the top of each screen or page of output.

`SKIP=n` Number of spaces to skip over before displaying the To: field.

`WIDTH=n` Number of characters of the To: field to display.

If you specify only one option, you may omit the parentheses.

EXAMPLES

The default directory listing format would be specified with the command shown below. This command should be entered on a single line; in the example it is shown as several lines for purposes of clarity only.

```
EMAIL> SET DIRECTORY_FORMAT/MARKED=(FLAGS="* ")
      /ID=(HEADING=" #",SKIP=0,WIDTH=4)
      /FROM=(HEADING="From",SKIP=1,WIDTH=20)
      /DATE=(HEADING="Date",SKIP=1,WIDTH=11)
      /SUBJECT=(HEADING="Subject",SKIP=2)
EMAIL>
```

SET & SHOW EDITOR

Specifies the editor to invoke in response to the `EDIT` command or `/EDIT` command qualifier.

restrictions Requires `SYSPRV` privilege to set information for users other than yourself; requires `SYSPRV` or `SYSNAM` privilege to show information about users other than yourself.

SYNTAX **SET EDITOR** *editor*
SET NOEDITOR
SHOW EDITOR

Qualifiers	Defaults
<code>/ALL</code>	<code>/NOALL</code>
<code>/LOG</code>	<code>/NOLOG</code>
<code>/SYSTEM_DEFAULT</code>	<i>None</i>
<code>/UIC="[g,m]"</code>	<i>None</i>
<code>/USER=username</code>	<i>None</i>

PARAMETERS

editor

Required parameter specifying the name of the editor to invoke. You may use any callable editor available on your system such as `EDT` or `TPU`.

DESCRIPTION

In response to the `EDIT` command or `/EDIT` command qualifier, PMDF MAIL invokes an editor. By default, the `EDT` editor is invoked. However, you may select another callable editor such as `TPU`:

```
EMAIL> SET EDITOR TPU
EMAIL> SHOW EDITOR
Your editor is TPU.
EMAIL>
```

Use the `SET NOEDITOR` command to restore the default behavior.

PMD MAIL commands

SET & SHOW EDITOR

QUALIFIERS

/SYSTEM_DEFAULT

The setting is the system-wide default for users who have not themselves selected an editor with SET EDIT. When used with SET NOEDITOR, removes the system-wide default.

EXAMPLES

1 EMAIL> SET EDITOR TPU
EMAIL> SHOW EDITOR
Your editor is TPU.
EMAIL>

In this example, the TPU editor is selected.

2 EMAIL> SET EDITOR/UIC=[1123,*]/LOG TPU
%EMAIL-S-MODRECORD, ASMITH record modified
%EMAIL-S-MODRECORD, AWART record modified
.
.
.
%EMAIL-I-MODRECORDS, 234 record modified
EMAIL> SHOW EDITOR/UIC=" [1123,3] "
Username Editor
ASMITH EDT
AWART EDT
.
.
.
EMAIL>

Here, the editor is set to TPU for the entire UIC group 1123.

SET & SHOW ERASE_SCREEN

Controls whether or not the screen is cleared before each message or directory listing display.

restrictions Requires SYSPRV privilege to set information for users other than yourself; requires SYSPRV or SYSNAM privilege to show information about users other than yourself.

SYNTAX **SET ERASE_SCREEN**
 SET NOERASE_SCREEN
 SHOW ERASE_SCREEN

Qualifiers	Defaults
/ALL	/NOALL
/LOG	/NOLOG
/UIC="[g,m]"	None
/USER=username	None

PARAMETERS *None.*

DESCRIPTION

Ordinarily, the screen of your terminal is cleared before each page of a message or directory listing is displayed. This default behavior is selected with the SET ERASE_SCREEN command. However, you may elect to suppress this screen erasure with the SET NOERASE_SCREEN command.

SET & SHOW EXTRACT_QUOTE

Controls how extracted message text is quoted in a message reply.

restrictions Requires SYSPRV privilege to set information for users other than yourself; requires SYSPRV or SYSNAM privilege to show information about users other than yourself.

SYNTAX **SET EXTRACT_QUOTE** *quote*
SET NOEXTRACT_QUOTE
SHOW EXTRACT_QUOTE

Qualifiers	Defaults
/ALL	/NOALL
/LOG	/NOLOG
/UIC="[g,m]"	None
/USER=username	None

PARAMETERS

quote
Text to prepend to each extracted message line.

DESCRIPTION

When the /EXTRACT qualifier is used in conjunction with the ANSWER or REPLY commands, the content of the message being replied to will be included in the reply. It is often useful to quote this extracted material by prepending to each line some text such as ">". Use the SET EXTRACT_QUOTE command to specify the text to use for quoting.

By default, no text is prepended to the lines of extracted messages. To restore this default, use the SET NOEXTRACT_QUOTE command. Note that the /EXTRACT qualifier of the ANSWER and REPLY commands also accepts an optional value which specifies text to use for quoting. When that value is specified, it overrides any setting made with the SET EXTRACT_QUOTE command.

EXAMPLES

In this example, ">" is selected to use in quoting extracted message text.

```
EMAIL> SET EXTRACT_QUOTE "> "  
EMAIL> SHOW EXTRACT_QUOTE  
Extracted message text is quoted with "> ".  
EMAIL>
```

PMDF MAIL commands

SET & SHOW FILE

SET & SHOW FILE

Open the specified mail file.

SYNTAX **SET FILE** *mail-file-spec*
SHOW FILE

Command Qualifiers	Defaults
<i>None.</i>	<i>None.</i>

PARAMETERS

mail-file-spec
Required parameter specifying the mail file to open.

DESCRIPTION

The **SET FILE** command opens the specified mail file, closing any currently open mail file if necessary. Your default mail file is **MAIL.MAI**. Use the **SET FILE** command to open other mail files created with the **COPY**, **FILE**, or **MOVE** commands.

You may use the **SHOW FILE** command to determine which mail file, if any, is currently open.

Note that if you are not in your default mail file when you issue any of the commands **DIRECTORY/NEW**, **READ/NEW**, or **SELECT/NEW** then the current mail file will be closed and your default mail file opened.

EXAMPLES

In this example, all of the messages from the **JOKES** folder are moved to the folder **JOKES** in the new mail file **JOKES.MAI**. The **SET FILE** command is then used to close the current mail file and open **JOKES.MAI**.

```
EMAIL> SET FOLDER JOKES
EMAIL> MOVE/ALL JOKES JOKES.MAI
File D1:[BOB]JOKES.MAI; does not exist.
Do you want to create it (Y/N, default is N)? Y
EMAIL> SET FILE JOKES.MAI
```

SET & SHOW FOLDER

Select a folder of messages.

SYNTAX

SET FOLDER [*folder-name* [*mail-file-spec*]]
SHOW FOLDER

Qualifiers	Defaults
<i>/BEFORE=date</i>	<i>None</i>
<i>/CC_SUBSTRING=text</i>	<i>None</i>
<i>/EDIT</i>	<i>/NOEDIT</i>
<i>/FIRST</i>	<i>/FIRST</i>
<i>/FROM_SUBSTRING=text</i>	<i>None</i>
<i>/FULL</i>	<i>/NOFULL</i>
<i>/LAST</i>	<i>/FIRST</i>
<i>/MARKED</i>	<i>None</i>
<i>/NEW</i>	<i>None</i>
<i>/REPLIED</i>	<i>None</i>
<i>/SINCE=date</i>	<i>None</i>
<i>/SUBJECT_SUBSTRING=text</i>	<i>None</i>
<i>/START=message-number</i>	<i>See text</i>
<i>/TO_SUBSTRING=text</i>	<i>None</i>

PARAMETERS

folder-name

Optional parameter specifying the name of the folder to select.

mail-file-spec

Optional parameter specifying the mail file to open.

DESCRIPTION

The **SET FOLDER** command is identical to the **SELECT** command. For information on the use of the **SET FOLDER** command, consult the description of the **SELECT** command.

Use the **SHOW FOLDER** command to determine which folder is currently selected.

SET & SHOW FORM

Specify the default print form.

restrictions Requires SYSPRV privilege to set information for users other than yourself; requires SYSPRV or SYSNAM privilege to show information about users other than yourself.

SYNTAX **SET FORM** *form-name*
SET NOFORM
SHOW FORM

Qualifiers	Defaults
<i>/ALL</i>	<i>/NOALL</i>
<i>/LOG</i>	<i>/NOLOG</i>
<i>/UIC="[g,m]"</i>	<i>None</i>
<i>/USER=username</i>	<i>None</i>

PARAMETERS

form-name
Required parameter specifying the print form to use.

DESCRIPTION

The SET FORM command specifies the “default” print form to use with the PRINT command. This default form will only be selected when the PRINT command is issued without the /FORM qualifier; *i.e.*, the /FORM qualifier will overrides the default print form by selecting a different print form. Use the SET NOFORM command to indicate that a print form may only be selected with the /FORM qualifier.

Contact your system manager or use the DCL command SHOW QUEUE/FORM to determine the valid form names which you may use.

EXAMPLES

In the following example, the SET FORM command is used to set the default print form to LANDSCAPE.

```
EMAIL> SET FORM LANDSCAPE
EMAIL> SHOW FORM
Your default print form is LANDSCAPE.
EMAIL>
```

SET & SHOW FORWARD

Set a forwarding address.

restrictions Requires SYSPRV or SYSNAM privilege to set or show information for users other than yourself.

SYNTAX **SET FORWARD** *forwarding-address*
SET NOFORWARD
SHOW FORWARD

Qualifiers	Defaults
/ALL	/NOALL
/LOG	/NOLOG
/UIC="[g,m]"	None
/USER=username	None

PARAMETERS

forwarding-address
Required parameter specifying the address to forward your mail to.

DESCRIPTION

The SET FORWARD command sets or changes a forwarding address for your mail. After you enter this command, any new mail messages will be sent to the forwarding address until such time that you either change it with a subsequent SET FORWARD command, or remove it entirely with the SET NOFORWARD command.

After setting or changing your forwarding address, be sure to show the new setting with the SHOW FORWARD command. Make sure that you did not make a typing mistake. If there is an error in the address, then mail sent to you may be returned to the sender as undeliverable or, worse yet, disappear entirely. *Note, however, that when SET FORWARD sets the forwarding address, it "wraps" the address in an IN% " wrapper. Do not be alarmed by this; it is correct. It is important that this be done as it allows the forwarding to work properly with VMS MAIL.*

PMDf MAIL commands

SET & SHOW FORWARD

EXAMPLES

1 EMAIL> SET FORWARD bob@example.com
EMAIL> SHOW FORWARD
Your mail is being forwarded to IN%"bob@example.com".
EMAIL>

In this example, the forwarding address is set to be IN%"bob@example.com".

2 EMAIL> SET FORWARD/USER=CATS-LIST cats-list@example.com
EMAIL> SHOW FORWARD/USER=CATS-LIST
CATS-LIST has mail forwarded to IN%"cats-list@example.com"
EMAIL>

In this example, forwarding is set up for the fictitious user CATS-LIST. This allows mail to be sent to CATS-LIST and have it automatically forwarded to cats-list@example.com.

SET & SHOW HEADER_TRIMMING

Control which message header lines are displayed.

SYNTAX

SET HEADER_TRIMMING *header-name*[,...]
SHOW HEADER_TRIMMING

Qualifiers	Defaults
/ALL	None
/BOLD	None
/DISPLAYED	/DISPLAYED
/INPUT= <i>in-file-spec</i>	See text
/MAX_LINES= <i>lines</i>	Unlimited
/MAX_OCCURRENCES= <i>occurrences</i>	Unlimited
/OMITTED	/DISPLAYED
/OUTPUT= <i>out-file-spec</i>	/NOOUTPUT
/PRECEDENCE= <i>precedence</i>	None
/REVERSE	None
/TRIM	See text
/UNDERLINE	None

PARAMETERS

header-name

Parameter specifying the name of the header line types to effect the setting for. This parameter is required when the /ALL qualifier is not used. The list of legal values for this parameter are not shown in this document. Use the question mark, ?, key to see the list of possible values as shown in the Example section. The header names are merely the names of header lines; *e.g.*, From, To, Subject, *etc.*

DESCRIPTION

You can instruct PMDF MAIL to not show certain header lines when you read your mail. This is often referred to as “header trimming”. Note, however, that the header is not actually trimmed — PMDF MAIL merely omits displaying the header lines which you do not want to see. You can view the full, untrimmed header with the /NOTRIM option of the message reading commands.

You should store your personal header trimming settings in the file `PMDF_INIT:PMDF_MAIL_HEADERS.OPT`.⁵ Whenever you invoke PMDF MAIL, this file will be read and your header trimming settings established. If you do not explicitly save your settings with the /OUTPUT qualifier, then when you exit PMDF MAIL you will be asked whether or not they should be output. If you answer yes, they will be written to the file cited previously.

⁵ PMDF_INIT is a logical which normally points to your login directory. You can redefine this logical to point somewhere else if you wish.

PMDF MAIL commands

SET & SHOW HEADER_TRIMMING

QUALIFIERS

/ALL

Settings are to affect all header lines. By default, only the header lines you specify are affected. Do not specify the **header-name** parameter when the */ALL* qualifier is used.

When used with the SHOW command, the */ALL* qualifier indicates that the disposition (trim vs. no trim) of each header line is to be shown. By default, only those header lines which are not trimmed are shown.

/BOLD

/NOBOLD

Specify whether or not to display the specified header lines with a bold face font. May be used in conjunction with */REVERSE* and */UNDERLINE*. Only the field name of the header line is affected.

/DISPLAYED (default)

/OMITTED

The */DISPLAYED* and */OMITTED* qualifiers may only be used with the SHOW HEADER_TRIMMING command. They are equivalent to */NOTRIM* and */TRIM*.

/INPUT=in-file-spec

Load or re-load an initial set of header trimming settings from the specified input file.

/MAX_LINES=lines

The maximum number of lines of text to output for a given type of header line.⁶ If not specified, then an unlimited number of lines may be displayed.

You may not specify */MAX_LINES* in conjunction with SET/TRIM.

/MAX_OCCURRENCES=occurrences

The maximum number of instances to display for a given type of header line.⁶ If not specified, then any number of instances may be displayed.

You may not specify */MAX_OCCURRENCES* in conjunction with SET/TRIM.

/OUTPUT[=out-file-spec]

Specifies a file to write the new header trimming settings to. If the output file name is omitted, then the setting will be written to the file PMDF_INIT:PMDF_MAIL_HEADERS.OPT.

/PRECEDENCE=precedence

/NOPRECEDENCE

Each header line may be assigned a precedence value between 0 and 100 inclusive. When header lines are displayed, the header line with the largest precedence

⁶ Do not be confused by the two types of "lines" being discussed here. A single *header line* may be so long that to display it on a terminal screen requires writing several *lines of text* to the terminal. The */MAX_LINES* qualifier limits the number of lines of text; whereas, */MAX_OCCURRENCES* limits the number of header lines. Note further that the PMDF MAIL */MAX_LINES* qualifier corresponds to the PMDF header trimming CUTLINES option.

PMDF MAIL commands SET & SHOW HEADER_TRIMMING

is displayed first, followed by the header line with next largest precedence, *etc.* PMDF's internal precedence rules are used to order header lines of the same precedence. The `/NOPRECEDENCE` qualifier assigns a precedence of zero, which is the default precedence value.

`/REVERSE` `/NOVERSE`

Specify whether or not to display the specified header lines in reverse video mode. May be used in conjunction with `/BOLD` and `/UNDERLINE`. Only the field name of the header line is affected.

`/TRIM` `/NOTRIM`

When used with the `SET` command, indicates whether or not the specified header lines will be displayed. `/NOTRIM` indicates that they are to be displayed while `/TRIM` indicates that they are not be displayed. While specifying `/TRIM` is equivalent to either `/MAX_LINES=0` or `/MAX_OCCURRENCES=0`, it is more efficient if you use `/TRIM`.

You may not specify `/TRIM` in conjunction with `/MAX_OCCURRENCES` or `/MAX_LINES`.

When used with the `SHOW` command, the `/TRIM` and `/OMITTED` qualifiers request that only the header lines which are trimmed be shown. The `/NOTRIM` and `/DISPLAYED` qualifiers request that the untrimmed header lines be shown. The default, if none of these four are specified, is `/NOTRIM`. Use the `/ALL` qualifier to show the disposition of all header lines.

`/UNDERLINE` `/NOUNDERLINE`

Specify whether or not to underline the specified header lines when displaying them. May be used in conjunction with `/BOLD` and `/REVERSE`. Only the field name of the header line is affected.

EXAMPLES

1 EMAIL> SET HEADER_TRIMMING ?

Optional group of keywords, must be chosen from:

- | | |
|--------------------------|------------------------------------|
| (1) a1-format | A1-format: header line |
| (2) a1-forward | A1-forward: header line |
| (3) a1-function | A1-function: header line |
| (4) a1-type | A1-type: header line |
| (5) addresses-referred-t | Addresses-referred-to: header line |
| (6) alternate-recipient | Alternate-recipient: header line |
| (7) application-name | Application-name: header line |
| (8) attachment | Attachment: header line |

.
.
.

More? **N**

PMDF MAIL commands

SET & SHOW HEADER_TRIMMING

-or-

Required qualifier, must be chosen from:

- (1) /all Setting is to affect all header lines
- (2) /input Input header line options
- (3) /max_lines Maximum number of lines to retain
- (4) /max_occurrences Maximum number of occurrences to retain
- (5) /nooutput Do not output settings to a file
- (6) /notrim Display specified header lines
- (7) /output Output updated settings to a file
- (8) /trim Do not display specified header lines

EMAIL> SET HEADER_TRIMMING

Here, the question mark, ?, is used to obtain information on the allowed values for the header name parameter.

```
2 EMAIL>
EMAIL> SET HEADER_TRIMMING/TRIM/ALL
EMAIL> SET HEADER_TRIMMING/NOTRIM/BOLD cc,comments,content-type,date,from
EMAIL> SET HEADER_TRIMMING/NOTRIM/BOLD keywords,organization,reply-to,
EMAIL> SET HEADER_TRIMMING/NOTRIM/BOLD sender,subject,to
EMAIL> SET HEADER_TRIMMING/NOTRIM/BOLD/REVERSE bcc
EMAIL> SET HEADER_TRIMMING/NOTRIM/BOLD/UNDERLINE resent-bcc,resent-cc
EMAIL> SET HEADER_TRIMMING/NOTRIM/BOLD/UNDERLINE resent-date,resent-from
EMAIL> SET HEADER_TRIMMING/NOTRIM/BOLD/UNDERLINE resent-reply-to
EMAIL> SET HEADER_TRIMMING/NOTRIM/BOLD/UNDERLINE resent-sender,resent-to
EMAIL> SET HEADER_TRIMMING/NOTRIM/BOLD/REVERSE/UNDERLINE resent-bcc
EMAIL> SET HEADER_TRIMMING/OUTPUT
EMAIL>
```

In this example, the first command specifies that no header lines are to be displayed. The next four commands then request which header lines should be displayed. The final command then saves these settings to the file PMDF_INIT:PMDF_MAIL_HEADERS.OPT so that they can be recalled every time you use PMDF MAIL.

```
3 EMAIL> SHOW HEADER_TRIMMING
Bcc:                                   emphasis=bold,reverse
Cc:                                    emphasis=bold
Comments:                              emphasis=bold
Content-type:                          emphasis=bold
Date:                                  emphasis=bold
From:                                  emphasis=bold
Resent-bcc:                            emphasis=bold,reverse,underline
Resent-cc:                             emphasis=bold,underline
Resent-date:                           emphasis=bold,underline
Resent-from:                           emphasis=bold,underline
Resent-reply-to:                       emphasis=bold,underline
Resent-sender:                         emphasis=bold,underline
Resent-to:                             emphasis=bold,underline
Sender:                                emphasis=bold
Subject:                               emphasis=bold
To:                                    emphasis=bold
EMAIL>
```

In this example, the active header trimming settings are displayed. In this case, these are the trimmings established by the commands shown above.

SET & SHOW IMAGE_COMMAND

Controls the DCL command used to display a MIME image type body part.

restrictions Requires SYSPRV privilege to set information for users other than yourself; requires SYSPRV or SYSNAM privilege to show information about users other than yourself.

SYNTAX **SET IMAGE_COMMAND** *command*
SET NOIMAGE_COMMAND
SHOW IMAGE_COMMAND

Qualifiers	Defaults
/ALL	/NOALL
/LOG	/NOLOG
/UIC="[g,m]"	None
/USER=username	None

PARAMETERS

command
DCL command to use to display an image.

DESCRIPTION

The SET and SHOW IMAGE_COMMAND commands control how PMDF MAIL displays MIME messages containing parts labelled as type image (e.g., a GIF or TIFF image).

PMDF MAIL has its own procedures for displaying images. You may override these procedures with the SET IMAGE_COMMAND. With this command, you specify a DCL command which accepts five parameters: (1) the message content type (always IMAGE), (2) the message content subtype, (3) the name of the file containing the data to display, (4) a title to show, if possible, when displaying the image, and (5) whether or not to delete the file after displaying it (DELETE or NODELETE). The specified DCL command will then be executed from a subprocess each time an image is to be displayed; the parameters (1) — (5) will be provided by PMDF MAIL.

To undo a setting made with the SET IMAGE_COMMAND command, use SET NOIMAGE_COMMAND. The current setting may be queried with the SHOW IMAGE_COMMAND command.

PMDF MAIL commands

SET & SHOW IMAGE_COMMAND

EXAMPLES

Suppose that the following command procedure D1:[BOB] IMAGE.COM has been developed to display images using the XV utility provided with PMDF:

```
$ set noverify
$ set noon
$ !
$ ! D1:[BOB] IMAGE.COM -- Display a message part of type IMAGE using XV
$ !
$ ! P1 = content type      (always "IMAGE")
$ ! P2 = content subtype  (accept anything; let XV decide what to do with it)
$ ! P3 = file name        (file containing image data to display)
$ ! P4 = title            (window title; e.g., "NEWMAIL 3")
$ ! P5 = DELETE/NODELETE
$ !
$ WNAME = ""-wname" ""'P2'"
$ XV     = "$PMDF_EXE:XV.EXE"
$ XV 'wname' 'P3'
$ if f$edit (P5, "UPCASE") .eqs. "DELETE" then delete/nolog 'P3';
$ exit
```

To instruct PMDF MAIL to use this procedure to display message parts of type IMAGE, issue the following command:

```
EMAIL> SET IMAGE_COMMAND "@D1:[BOB] IMAGE.COM"
EMAIL> SHOW IMAGE_COMMAND
Image viewing command is "@D1:[BOB] IMAGE.COM".
EMAIL>
```

SET & SHOW IMAGE_PROMPT

Controls whether or not you are prompted before a message part of type image is displayed.

restrictions Requires SYSPRV privilege to set information for users other than yourself; requires SYSPRV or SYSNAM privilege to show information about users other than yourself.

SYNTAX **SET IMAGE_PROMPT**
 SET NOIMAGE_PROMPT
 SHOW IMAGE_PROMPT

Qualifiers	Defaults
/ALL	/NOALL
/LOG	/NOLOG
/UIC="[g,m]"	None
/USER=username	None

PARAMETERS *None.*

DESCRIPTION

The SET and SHOW IMAGE_PROMPT commands control whether or not you are prompted before any message part of type image is displayed. The prompt asks you whether or not the part should be displayed. If you answer in the affirmative, then it will be displayed; otherwise, it will be skipped and the remainder of the message, if any, presented.

By default, image parts are displayed without your prior approval. To require that you be prompted beforehand, issue the SET IMAGE_PROMPT command:

```
EMAIL> SET IMAGE_PROMPT
EMAIL> SHOW IMAGE_PROMPT
Image display prompting is enabled.
EMAIL>
```

To restore the default behavior, use the SET NOIMAGE_PROMPT command:

```
EMAIL> SET NOIMAGE_PROMPT
EMAIL> SHOW IMAGE_PROMPT
Image display prompting is disabled.
EMAIL>
```

PMDF MAIL commands

SET & SHOW IMAGE_WAIT

SET & SHOW IMAGE_WAIT

Controls whether or not PMDF MAIL waits for a spawned image viewing process to terminate.

restrictions Requires SYSPRV privilege to set information for users other than yourself; requires SYSPRV or SYSNAM privilege to show information about users other than yourself.

SYNTAX

SET IMAGE_WAIT
SET NOIMAGE_WAIT
SHOW IMAGE_WAIT

Qualifiers	Defaults
/ALL	/NOALL
/LOG	/NOLOG
/UIC="[g,m]"	None
/USER=username	None

PARAMETERS *None.*

DESCRIPTION

When PMDF MAIL displays a message part of type "image", a subprocess is created to display the message part. By default, PMDF MAIL will not wait for the subprocess to terminate, thus allowing you to continue reading your mail while the image is displayed.

Issue the command `SET IMAGE_WAIT` to instruct PMDF MAIL to always wait for the viewing subprocess to terminate prior to continuing. Use the command `SET NOIMAGE_WAIT` to inhibit waiting on the subprocess.

EXAMPLES

To cause PMDF MAIL to display an image and then wait until the image viewer is exited, issue the command `SET NOIMAGE_WAIT`:

```
EMAIL> SET NOIMAGE_WAIT
EMAIL> SHOW IMAGE_WAIT
Image display waiting is disabled.
EMAIL>
```

This will prevent, for instance, cases where the image viewer's output becomes interspersed with output from PMDF MAIL on your terminal screen.

SET & SHOW MAIL_DIRECTORY

Move mail files to the specified subdirectory.

restrictions Requires SYSPRV or SYSNAM privilege to show information for users other than yourself. Requires SYSPRV privilege plus general file access privileges to set information and move files for users other than yourself.

SYNTAX **SET MAIL_DIRECTORY** [*.subdirectory*]
SET NOMAIL_DIRECTORY
SHOW MAIL_DIRECTORY

Qualifiers	Defaults
/ALL	/NOALL
/LOG	/NOLOG
/NOCONFIRM	None
/UIC="[g,m]"	None
/USER=username	None

PARAMETERS

[.subdirectory]
Required parameter specifying the subdirectory to move mail files to.

DESCRIPTION

The SET MAIL_DIRECTORY command specifies that all mail files — files with the extension .MAI — be moved from their current location to the specified subdirectory of your login directory. Normally, your mail files clutter up your login directory. You can prevent this by moving them to a subdirectory such as [.MAIL].

The SET NOMAIL_DIRECTORY command causes your mail files to be moved back to your login directory. Use the SHOW MAIL_DIRECTORY command to determine where your mail files are currently located.

System managers may wish to use the /NOCONFIRM qualifier when automatically generating settings for a number accounts with the /USER qualifier.

PMDf MAIL commands

SET & SHOW MAIL_DIRECTORY

QUALIFIERS

/NOCONFIRM

Users who have not yet run a VMS mail client will not yet have a profile entry in the VMS MAIL profile database. When attempting to set a mail subdirectory for such a user with the `/USER` qualifier, you will be prompted as to whether or not to really make the setting (it is possible that there is no profile entry because you mistyped the username). To avoid being prompted, use the `/NOCONFIRM` qualifier in which case a profile entry will be created with the correct mail subdirectory setting. This is useful, for instance, when generating settings for a number of recently created user accounts.

EXAMPLES

1 EMAIL> SET MAIL_DIRECTORY/LOG [.MAIL]
%EMAIL-S-CREATED, D1:[BOB.MAIL] created
%EMAIL-S-RENAMED, D1:[BOB]MAIL.MAI;1 renamed to D1:[BOB.MAIL]MAIL.MAI;1
%EMAIL-S-RENAMED, D1:[BOB]MAIL\$03C813CD00050095.MAI;1 renamed to
D1:[BOB.MAIL]MAIL\$03C813CD00050095.MAI;1
EMAIL>

In this example, the user BOB elects to store his mail files in the subdirectory [.MAIL].

2 EMAIL> SET MAIL_DIRECTORY/LOG/USER=* [.MAIL]
.
.
.
EMAIL>

In this example, the mail files for every user of the system (with a profile database entry) are moved to the subdirectory [.MAIL] of their login directory.

SET & SHOW NEW_MAIL_COUNT

Change your new mail count register.

restrictions Requires SYSPRV privilege to set information for users other than yourself; requires SYSPRV or SYSNAM privilege to show information about users other than yourself.

SYNTAX **SET NEW_MAIL_COUNT** *count*
SHOW NEW_MAIL_COUNT

Qualifiers	Defaults
/LOG	/NOLOG
/UIC="[g,m]"	None
/USER=username	None

PARAMETERS

count
Required parameter specifying the new count.

DESCRIPTION

Now and then, you may find that your new mail count is incorrect. This count appears when you login or invoke VMS or PMDF MAIL. There are several technical reasons for why this can happen. You may use the SET NEW_MAIL_COUNT to change the count. Use the SHOW NEW_MAIL_COUNT command to display the count.

It is important to keep in mind that the value of this counter may be manipulated independently of the number of new mail messages which you actually have. If you have five new mail messages and set the counter to zero, then you still have five new mail messages which you may still read. All that has changed is the value of a counter (register); the value of this counter is reported when you first login,

You have 1 new Mail message.

and when you invoke VMS or PMDF MAIL. Whenever you receive a new mail message, the value of this counter is increased by one; when you read a new mail message, the value of this counter is decreased by one.

PMDf MAIL commands

SET & SHOW NEW_MAIL_COUNT

EXAMPLES

1 EMAIL> SET NEW_MAIL_COUNT 0
EMAIL> SHOW NEW_MAIL_COUNT
You have 0 new messages.
EMAIL>

In this example, the new mail count is set to zero.

2 EMAIL> SET NEW_MAIL_COUNT/USER=EKANE/LOG 0
%EMAIL-S-MODRECORD, MROCHEK record modified
%EMAIL-I-MODRECORDS, 1 record modified
EMAIL> SHOW NEW_MAIL_COUNT/USER=EKANE
MROCHEK has 0 new mail messages
EMAIL>

In this example, the new mail count for the user EKANE is set to zero.

SET & SHOW PERSONAL_NAME

Specifies the personal name to include in your return address.

restrictions Requires SYSPRV privilege to set information for users other than yourself; requires SYSPRV or SYSNAM privilege to show information about users other than yourself.

SYNTAX **SET PERSONAL_NAME** *"name"*
SET NOPERSONAL_NAME
SHOW PERSONAL_NAME

Qualifiers	Defaults
/ALL	/NOALL
/LOG	/NOLOG
/UIC="[g,m]"	None
/USER=username	None

PARAMETERS

name

Required parameter specifying the personal name you wish to use in your return address. Enclose the name specification in quotes.

DESCRIPTION

You may elect to show a "personal name" in your return addresses. For instance, if your return address is jdoe@example.com, then issuing the command

```
EMAIL> SET PERSONAL_NAME "John Doe"
```

will result in your return address appearing as

```
From: John Doe <jdoe@example.com>
```

in mail which you send.

To cease using a personal name, use the SET NOPERSONAL_NAME command. Use the SHOW PERSONAL_NAME command to display your personal name setting.

Personal names may not contain more than one consecutive space. This is a restriction required by callable MAIL.

PMDF MAIL commands

SET & SHOW PERSONAL_NAME

EXAMPLES

In this example, the personal name field is set to Judy Q. Public.

```
EMAIL> SET PERSONAL_NAME "Judy Q. Public"  
EMAIL> SHOW PERSONAL_NAME  
Your personal name is "Judy Q. Public".
```

SET & SHOW QUEUE

Specify the default print queue.

restrictions Requires SYSPRV privilege to set information for users other than yourself; requires SYSPRV or SYSNAM privilege to show information about users other than yourself.

SYNTAX **SET QUEUE** *queue-name*
SET NOQUEUE
SHOW QUEUE

Qualifiers	Defaults
/ALL	/NOALL
/LOG	/NOLOG
/UIC="[g,m]"	None
/USER=username	None

PARAMETERS

queue-name

Required parameter specifying the name of a printer queue to use for printing mail messages.

DESCRIPTION

The SET QUEUE command specifies the “default” print queue to submit print jobs to. This default queue will only be selected when the PRINT command is issued without the /QUEUE qualifier.

If you do not select a print queue, or have issued the command SET NOQUEUE, printed messages will be queued to SYSSPRINT. Again, this may be overridden with the /QUEUE qualifier of the PRINT command.

Contact your system manager or use the DCL command SHOW QUEUE to determine the print queues which you may use to print mail messages.

PMDf MAIL commands

SET & SHOW QUEUE

EXAMPLES

In the following example, the SET QUEUE command is used to select the printer queue PS_PRT as the default printer queue.

```
EMAIL> SET QUEUE PS_PRT
EMAIL> PRINT
EMAIL> PRINT/NOW
Job MAIL_01GV30SEH9QQ8WW845_PRINT (queue PS_PRT, entry 800) started on PS_PRT
EMAIL>
```

SET & SHOW SIGNATURE

Specify a signature file to append to messages you send.

restrictions Requires SYSPRV privilege to set information for users other than yourself; requires SYSPRV or SYSNAM privilege to show information about users other than yourself.

SYNTAX **SET SIGNATURE** *file-spec*
SHOW SIGNATURE

Qualifiers	Defaults
/ALL	/NOALL
/LOG	/NOLOG
/UIC="[g,m]"	None
/USER=username	None

PARAMETERS

file-spec

Required parameter specifying a file whose content is to be appended to mail messages as a signature.

DESCRIPTION

Users may append the contents of a file to the end of messages they send. The specification for the file must be supplied as a parameter to the SET SIGNATURE command:

```
EMAIL> SET SIGNATURE file-spec
```

If no disk and directory specification is provided, the signature file is assumed to be in the user's default mail file directory.

Use the SET NOSIGNATURE command to disable the use of signatures. Note further that the various message sending commands accept optional /SIGNATURE and /NOSIGNATURE qualifiers.

PMDF MAIL commands

SET & SHOW SIGNATURE

EXAMPLES

In the following example, the contents of the file SYS\$LOGIN:SIGFILE.TXT is used as a signature file.

```
EMAIL> SET SIGNATURE SYS$LOGIN:SIGFILE.TXT
EMAIL> SHOW SIGNATURE
Your default signature file is SYS$LOGIN:SIGFILE.TXT
EMAIL>
```

SET & SHOW SOUND_LEVEL

Specify the default audio playback sound level (volume).

restrictions Requires SYSPRV privilege to set information for users other than yourself; requires SYSPRV or SYSNAM privilege to show information about users other than yourself.

SYNTAX **SET SOUND_LEVEL *level***
SHOW SOUND_LEVEL

Qualifiers	Defaults
/ALL	/NOALL
/LOG	/NOLOG
/UIC="[g,m]"	None
/USER=username	None

PARAMETERS

level

Required parameter specifying the audio playback sound level (volume). Should be an integer ranging from 0 to 100 (0% to 100%).

DESCRIPTION

With the SET SOUND_LEVEL command, you may adjust the sound level (volume) used when audio files and messages are played. If you do not specify a sound level, then a level of 60% is used. The /SOUND_LEVEL qualifier of the PLAY command overrides any setting made with the SET SOUND_LEVEL command.

Use the SHOW SOUND_LEVEL command to display your current sound level setting.

EXAMPLES

In the following example, the playback sound level is set to 70%. Note that the percent sign, %, is omitted when specifying the level.

```
EMAIL> SET SOUND_LEVEL 70
EMAIL> SHOW SOUND_LEVEL
Audio playback sound level is 70%.
EMAIL>
```

PMDF MAIL commands

SET & SHOW SPEAKER

SET & SHOW SPEAKER

Specify which speaker, external or internal, to use for audio playback.

restrictions Requires SYSPRV privilege to set information for users other than yourself; requires SYSPRV or SYSNAM privilege to show information about users other than yourself.

SYNTAX **SET SPEAKER** *speaker*
SHOW SPEAKER

Qualifiers	Defaults
/ALL	/NOALL
/LOG	/NOLOG
/UIC="[g,m]"	None
/USER=username	None

PARAMETERS

speaker
Required parameter specifying which speaker, EXTERNAL or INTERNAL, to use for audio playback.

DESCRIPTION

By default the audio content of audio files and messages is output to the internal speaker on workstations equipped with an audio device (SOA0:). You may select the external speaker with the command

```
EMAIL> SET SPEAKER EXTERNAL
```

The command

```
EMAIL> SET SPEAKER INTERNAL
```

selects the internal speaker.

The /SPEAKER qualifier of the PLAY command may be used to override settings made with the SET SPEAKER command. Use the SHOW SPEAKER command to display your current sound level setting.

Note that on many early VAXstation 4000/60 systems, the internal speaker is inoperable.

SET USERNAME

Become another mail user.

restrictions Requires CMKRNL privilege as well as sufficient privileges to access other users' mail files.

SYNTAX **SET USERNAME** *[username]*

Command Qualifiers	Defaults
<i>None.</i>	<i>None.</i>

PARAMETERS

username
Optional parameter specifying the username to assume.

DESCRIPTION

The SET USERNAME command may be used to examine mail problems with other users; it is intended for use by system managers only. This command does the following:

1. Closes any open mail files and shuts down any mail context.
2. Changes your process's username to the specified username.
3. Creates a new mail context under the guise of the new username.

All subsequent commands which you enter will have the same effect as if you had logged in as that user.

Issue the SET USERNAME command without any parameter to resume operating as yourself. When you exit PMDF MAIL, your username will be restored if you have not already done so.

EXAMPLES

In this example, the user WALTER becomes the user WENDY:

```
$ PMDF MAIL
You have 1 new message.
EMAIL> SET USERNAME WENDY
You have 4 new messages.
```

PMDf MAIL commands

SET USERNAME

EMAIL> SPAWN SHOW PROCESS

24-FEB-2012 15:46:17.90 User: WENDY
Node: VAX1

Process ID: 20203D41
Process name: "WENDY_1"

Terminal:

User Identifier: [MANAGER,WALTER]
Base priority: 4
Default file spec: D1:[WALTER]

EMAIL> EXIT

\$ SHOW PROCESS

24-FEB-2012 15:46:31.10 User: WALTER
Node: VAX1

Process ID: 20203115
Process name: "Pilgermann"

Terminal:

FTA83:
User Identifier: [MANAGER,WALTER]
Base priority: 4
Default file spec: D1:[WALTER]

\$

SET & SHOW VIDEO_COMMAND

Controls the DCL command used to display a MIME video type body part.

restrictions Requires SYSPRV privilege to set information for users other than yourself; requires SYSPRV or SYSNAM privilege to show information about users other than yourself.

SYNTAX **SET VIDEO_COMMAND** *command*
SET NOVIDEO_COMMAND
SHOW VIDEO_COMMAND

Qualifiers	Defaults
/ALL	/NOALL
/LOG	/NOLOG
/UIC="[g,m]"	None
/USER=username	None

PARAMETERS

command
DCL command to use to display a video.

DESCRIPTION

The SET and SHOW VIDEO_COMMAND commands control how PMDF MAIL displays MIME messages containing parts labelled as type video (e.g., an MPEG video).

PMDF MAIL has its own procedures for displaying videos. You may override these procedures with the SET VIDEO_COMMAND. With this command, you specify a DCL command which accepts five parameters: (1) the message content type (always VIDEO), (2) the message content subtype, (3) the name of the file containing the data to display, (4) a title to show, if possible, when displaying the video, and (5) whether or not to delete the file after displaying it (DELETE or NODELETE). The specified DCL command will then be executed from a subprocess each time a video is to be displayed; the parameters (1) — (5) will be provided by PMDF MAIL.

To undo a setting made with the SET VIDEO_COMMAND command, use SET NOVIDEO_COMMAND. The current setting may be queried with the SHOW VIDEO_COMMAND command.

SET & SHOW VIDEO_PROMPT

Controls whether or not you are prompted before a message part of type video is displayed.

restrictions Requires SYSPRV privilege to set information for users other than yourself; requires SYSPRV or SYSNAM privilege to show information about users other than yourself.

SYNTAX **SET VIDEO_PROMPT**
 SET NOVIDEO_PROMPT
 SHOW VIDEO_PROMPT

Qualifiers	Defaults
<i>/ALL</i>	<i>/NOALL</i>
<i>/LOG</i>	<i>/NOLOG</i>
<i>/UIC="[g,m]"</i>	<i>None</i>
<i>/USER=username</i>	<i>None</i>

PARAMETERS *None.*

DESCRIPTION

The SET and SHOW VIDEO_PROMPT commands control whether or not you are prompted before any message part of type video is displayed. The prompt asks you whether or not the part should be displayed. If you answer in the affirmative, then it will be displayed; otherwise, it will be skipped and the remainder of the message, if any, presented.

By default, video parts are not displayed without your prior approval. To suppress prompting, issue the SET NOVIDEO_PROMPT command:

```
EMAIL> SET NOVIDEO_PROMPT
EMAIL> SHOW VIDEO_PROMPT
Video display prompting is disabled.
EMAIL>
```

To restore the default behavior, use the SET VIDEO_PROMPT command:

```
EMAIL> SET VIDEO_PROMPT
EMAIL> SHOW VIDEO_PROMPT
Video display prompting is enabled.
EMAIL>
```

SET & SHOW VIDEO_WAIT

Controls whether or not PMDF MAIL waits for a spawned video viewing process to terminate.

restrictions Requires SYSPRV privilege to set information for users other than yourself; requires SYSPRV or SYSNAM privilege to show information about users other than yourself.

SYNTAX

SET VIDEO_WAIT
SET NOVIDEO_WAIT
SHOW VIDEO_WAIT

Qualifiers	Defaults
/ALL	/NOALL
/LOG	/NOLOG
/UIC="[g,m]"	None
/USER=username	None

PARAMETERS *None.*

DESCRIPTION

When PMDF MAIL displays a message part of type "video", a subprocess is created to display the message part. By default, PMDF MAIL will not wait for the subprocess to terminate, thus allowing you to continue reading your mail while the video is displayed.

Issue the command SET VIDEO_WAIT to instruct PMDF MAIL to always wait for the viewing subprocess to terminate prior to continuing. Use the command SET NOVIDEO_WAIT to inhibit waiting on the subprocess.

EXAMPLES

To cause PMDF MAIL to display a video and then wait until the video viewer is exited, issue the command SET NOVIDEO_WAIT:

```
EMAIL> SET NOVIDEO_WAIT
EMAIL> SHOW VIDEO_WAIT
Video display waiting is enabled.
EMAIL>
```

This will prevent, for instance, cases where the video viewer's output becomes interspersed with output from PMDF MAIL on your terminal screen.

PMDF MAIL commands

SET & SHOW WASTEBASKET_NAME

SET & SHOW WASTEBASKET_NAME

Change the name of your wastebasket folder.

SYNTAX

SET WASTEBASKET_NAME *folder-name*
SHOW WASTEBASKET_NAME

Command Qualifiers	Defaults
--------------------	----------

None.

None.

PARAMETERS

folder-name

Required parameter specifying the name of the folder to use for the wastebasket folder. Any name except MAIL or NEWMAIL may be used.

DESCRIPTION

Deleted messages are moved to the wastebasket folder of the current mail file. By default, the name of this folder is WASTEBASKET. You can, if you wish, select a different name with the SET WASTEBASKET_NAME command. If no mail file is open when this command is issued, then your default mail file will be opened and the name of its wastebasket folder will be changed.

SHOW ALL

Display detailed information about the state of PMDF MAIL and your profile.

SYNTAX

SHOW ALL

Command Qualifiers	Defaults
--------------------	----------

None.

None.

PARAMETERS

None.

DESCRIPTION

The SHOW ALL command has the same effect as entering individually each of the other SHOW commands, with the exception of the SHOW HEADER_TRIMMING command.

EXAMPLES

In the following example, the SHOW ALL command is used to obtain detailed information on the state of PMDF MAIL (*e.g.*, name of the currently opened mail file and folder) and the user's mail profile (*e.g.*, personal name setting, forwarding address, default mail file name, *etc.*).

```
EMAIL> SHOW ALL
Your mail file directory is D1:[JQP.MAIL].
Your current mail file is D1:[JQP.MAIL]MAIL.MAI;1.
No folder is currently selected.
The wastebasket folder name is WASTEBASKET.
Mail file D1:[JQP.MAIL]MAIL.MAI;1
    contains 8857 deleted message bytes.
You have 2 new messages.

You have not set a forwarding address.
Your personal name is "John Q. Public".
Your editor is TPU.
CC prompting is disabled.
Automatic copy to yourself on REPLY and SEND.
Automatic deleted message purge is disabled.
Your default print queue is SYS$PRINT.
You have not specified a default print form.
Read new mail messages will be left in the NEWMAIL folder.
.
.
.
EMAIL>
```

PMDF MAIL commands

SHOW DELETED

SHOW DELETED

Display the amount of unreclaimed message space in the current mail file.

SYNTAX **SHOW DELETED**

Command Qualifiers	Defaults
<i>None.</i>	<i>None.</i>

PARAMETERS *None.*

DESCRIPTION

The `SHOW DELETED` command displays the amount of unreclaimed message space in the currently open mail file. If no mail file is currently open when the command is issued, the default mail file is opened. If the size of the space exceeds 32,767 bytes, then the next `PURGE` command or automatic wastebasket purge will reclaim the space. Alternatively, you may use the `PURGE/RECLAIM` command to explicitly request that this space be reclaimed.

EXAMPLES

In the following example, the `PURGE/RECLAIM/STATISTICS` command is used to delete the messages from the wastebasket folder. The amount of deleted message space before and after the purge operation is displayed with the `SHOW DELETED` command.

```
EMAIL> SHOW DELETED
Mail file D1:[BOB]MAIL.MAI;1
    contains 14125 deleted message bytes.
EMAIL> PURGE/RECLAIM/STATISTICS
%EMAIL-I-RECLPLSWAIT, reclaiming deleted file space.  Please wait...
Reclaim statistics:
    Messages deleted:          15
    Data buckets scanned:     18
    Data buckets reclaimed:   13
    Index buckets reclaimed:  0
    Total buckets reclaimed:  13
EMAIL> SHOW DELETED
Mail file D1:[BOB]MAIL.MAI;1
    contains 0 deleted message bytes.
EMAIL>
```

SHOW VERSION

Display the PMDF MAIL version number.

SYNTAX **SHOW VERSION**

Command Qualifiers	Defaults
<i>None.</i>	<i>None.</i>

PARAMETERS *None.*

DESCRIPTION

The `SHOW VERSION` command displays the PMDF MAIL version number.

EXAMPLES

In the following example, the `SHOW VERSION` command is used to determine the running version of PMDF MAIL.

```
EMAIL> SHOW VERSION
EMAIL> sho ver
%EMAIL-I-VERSION, PMDF-MAIL V5.0-1
      Digital AlphaStation 400 4/233 running OpenVMS Alpha V6.1-1H2
EMAIL>
```

SPAWN

Create a subprocess.

SYNTAX **SPAWN** [*command*]

Qualifiers	Defaults
<i>/INPUT=in-file-spec</i>	None
<i>/LOGICAL_NAMES</i>	<i>/LOGICAL_NAMES</i>
<i>/OUTPUT=out-file-spec</i>	None
<i>/PROCESS=name</i>	None
<i>/SYMBOLS</i>	<i>/SYMBOLS</i>
<i>/WAIT</i>	<i>/WAIT</i>

PARAMETERS

command

Optional parameter specifying the DCL command string for the subprocess to execute. After the command completes, the subprocess terminates and control is returned to the parent process.

DESCRIPTION

The SPAWN command may be used to either issue a single DCL command from within PMDF MAIL or to leave PMDF MAIL temporarily, do other work (*e.g.*, type out a file, generate a directory listing, *etc.*), and then return to PMDF MAIL.

By default, the context of the current process is copied to the subprocess. This behavior may be controlled with the */LOGICAL_NAMES* and */SYMBOLS* qualifiers.

QUALIFIERS

/INPUT=in-file-spec

Specifies an input command file from which the subprocess is to draw command input. Once command processing is completed, the subprocess terminates. When you specify both a command string and input file, then the command string is first processed and then the commands from the input file.

/LOGICAL_NAMES (default)

/NOLOGICAL_NAMES

The */LOGICAL_NAMES* qualifier specifies that the logical names of the parent process are to be copied to the subprocess. This is the default behavior. Specify

/NOLOGICAL_NAMES to prevent the subprocess from inheriting the logical name definitions of its parent.

/OUTPUT=out-file-spec

Specifies the output file to which the output of the subprocess is to be directed. If the */OUTPUT* qualifier is omitted, then subprocess output is directed to the current SYSSOUTPUT device (generally, your terminal).

/PROCESS=name

Specifies the process name to associate with the subprocess. If not specified, a default name of the form USERNAME_n, where "USERNAME" is your username, is used.

/SYMBOLS (default)

/NOSYMBOLS

The */SYMBOLS* qualifier specifies that the DCL symbol definitions of the parent process are to be copied to the subprocess. This is the default behavior. Specify */NOSYMBOLS* to prevent the subprocess from inheriting the symbol definitions of its parent.

/WAIT (default)

/NOWAIT

By default, your current (parent) process will wait until the subprocess has finished its processing and terminated. This default behavior is explicitly selected with the */WAIT* qualifier. The */NOWAIT* qualifier allows you to continue working from your current process while the subprocess is running. When you specify */NOWAIT*, you should also specify the */OUTPUT* qualifier so as to prevent the subprocess output from appearing on your terminal screen.

EXAMPLES

```
1 EMAIL> SPAWN DIRECTORY/SIZE=ALL A.TXT
Directory D1: [BOB]
A.TXT;10      125/126
A.TXT;9       124/126
A.TXT;8       124/126
Total of 3 files, 373/378.
EMAIL> SPAWN PURGE/LOG A.TXT
%PURGE-I-FILPURG, D1: [BOB]A.TXT;9 deleted (126 blocks)
%PURGE-I-FILPURG, D1: [BOB]A.TXT;8 deleted (126 blocks)
%PURGE-I-TOTAL, 2 files deleted (252 blocks)
EMAIL>
```

In this example, the SPAWN command is used to obtain a directory listing of the files A.TXT, and then to purge back old versions of that file. The ability to do this is useful when you find that you have insufficient disk quota to create and edit a mail message you wish to send.

PMDF MAIL commands

SPAWN

2 EMAIL> SPAWN

.
.
.

\$ LOGOUT

Process BOB_1 logged out at 23-FEB-2012 12:12:51.42
You have 3 new messages.
EMAIL>

In this example a SPAWN command with no command string is issued. This places you into the subprocess where you can issue DCL commands and perform other processing. When you are done with the subprocess and ready to return to PMDF MAIL, use the LOGOUT or EOJ command.

3 EMAIL> SPAWN DOCUMENT REPLY.SDML LETTER MAIL

.
.[... output from DOCUMENT ...]
.
EMAIL>

Here, the SPAWN command is used to invoke DOCUMENT to process a file. While DOCUMENT is running, you cannot enter other PMDF MAIL commands. After DOCUMENT is finished, the EMAIL> prompt again appears at which point you may resume entering PMDF MAIL commands.

4 EMAIL> SPAWN/NOWAIT/OUTPUT=REPLY.LOG DOCUMENT REPLY.SDML LETTER MAIL
EMAIL>

In this example, the /NOWAIT and /OUTPUT qualifiers are used in conjunction with the SPAWN command. This allows you to continue to enter commands while the subprocess is running. The subprocess output is written to the file REPLY.LOG which you can type out or view with an editor at your leisure.

UNMARK

Clear the mark on a message or change its new vs. read or unreplied vs. replied status.

SYNTAX **UNMARK** *[message-number[,...]]*

Qualifiers	Defaults
<i>/ALL</i>	<i>None</i>
<i>/READ</i>	<i>None</i>
<i>/REPLIED</i>	<i>None</i>

PARAMETERS

message-number[,...]

Optional list of integers specifying which messages to unmark. Ranges are permitted (*e.g.*, 5-7).

DESCRIPTION

The UNMARK command clears mark flags set with the MARK command. If the optional **message-number** parameter is omitted, then the mark flag will be removed (cleared) in the last message read. When the */ALL* qualifier is specified, the mark flag is removed from all currently selected messages.

The */READ*, */NOREAD*, */REPLIED*, and */NOREPLIED* qualifiers may be used to change the new vs. read and replied vs. unreplied status of a message. New messages are flagged as being read after you read them, and flagged as being replied after your reply to them. These flags only appear when you use the DIRECTORY/FULL command.

The COPY, DELETE, EXTRACT, FILE, MOVE, PRINT, and SELECT commands can all be directed to only operate on marked, unmarked, read, unread, replied, or unreplied messages.

QUALIFIERS

/ALL

Unmark all currently selected messages.

/READ

/NOREAD

Mark the specified messages as being unread (new), */NOREAD*, or read, */READ*.

PMDF MAIL commands

UNMARK

/REPLIED
/NOREPLIED

Mark the specified messages as having been replied to, */REPLIED*, or as having not been replied to, */NOREPLIED*.

9 Utilities

PMDF contains a modest collection of user-level utility programs. Briefly, these utilities are

Utility	Description
DB	Manage a personal alias database
DECODE	Decode a file encoded using MIME encodings
ENCODE	Encode a file using MIME encodings
FOLDER	Place a message file into a VMS MAIL mail folder
FORWARD	Set a forwarding address in the PMDF alias database
MAIL	An extended version of VMS MAIL; see Chapter 8
migrate	UNIX-style utility to copy folders of messages from one system running an IMAP server to another system running an IMAP server
PASSWORD	Set a password in the PMDF password database
PS	Convert text and Runoff .MEM files to PostScript; provided with PMDF-FAX
PSWRAP	Convert a PostScript file to a file which is safe to mail
QM	Manipulate your messages which you have sent but which have not yet been delivered
SEND	Send a mail message

The PMDF MAIL utility is described in Chapter 8; the PMDF DB utility is described in Section 9.3; the PMDF QM utility is described in Section 9.2; all other PMDF user utilities are described in the next section.

9.1 DCL Command Line Utilities

In this section the PMDF utilities which are implemented as simple DCL commands are described and examples of their usage given.

DECODE— Decode encoded files

Decodes a file which was previously encoded with the ENCODE utility or encoded using a MIME aware mail agent.

restrictions *None.*

SYNTAX **PMDF DECODE** *encoded-file-spec output-file-spec*

Qualifiers	Defaults
<i>/ENCODING=type</i>	<i>None</i>
<i>/FILENAME</i>	<i>/NOFILENAME</i>
<i>/HEADER</i>	<i>/NOHEADER</i>

prompts Input file: *encoded-file-spec*
Output file: *output-file-spec*

PARAMETERS

encoded-file-spec

Specifies the name of an encoded input file. The input file must be a file previously created with the ENCODE utility.

output-file-spec

The name of the file to produce as output. The file output by DECODE will have the identical format, structure, contents, *etc.* of the original file encoded with ENCODE.

When the */FILENAME* qualifier is used, the *output-file-spec* is treated as a default file specification and as much as possible of the file name, if any, specified in the Content-type: header line is used to generate the actual output file name.

DESCRIPTION

PMDF DECODE and ENCODE have been, for the most part, made obsolete by PMDF MAIL. If you use PMDF MAIL, then files which you send with the SEND command will be encoded automatically, if necessary. Encoded messages which you receive will be decoded automatically, if necessary, and can simply be extracted to a file with the EXTRACT command. If, however, you do not use PMDF MAIL, then read on.

The ENCODE and DECODE utilities are provided with PMDF as a means of transmitting OpenVMS binary files via VMS MAIL and other non-MIME aware agents. With ENCODE, a file can be encoded in a format which uses short records containing only printable characters. Such files can then be transmitted through

most any mail system without being altered (*e.g.*, lines wrapped, characters removed or replaced, *etc.*). ENCODE preserves all file contents and all file attributes when encoding a file. The contents and attributes are properly restored when decoded with DECODE. Absolutely any type of OpenVMS file can be transmitted with these two utilities — even indexed files with multiple keys and files with extended semantics.

Encoded files have two parts. The first part is a conventional RFC 822 message header. Header lines are used to describe the file format; this information includes a conventional OpenVMS FDL (file description language) description of the file and a description of the encoding used to convert the file into a printable form for transfer. ENCODE creates this header; DECODE reads it and uses the information it contains to reconstruct the file.

Note: Many encoded messages received with PMDF are automatically decoded for you, thus obviating the need to use PMDF DECODE at all. This is especially true when you use PMDF MAIL whose EXTRACT command will extract any MIME encoded message or message body part. If you use VMS MAIL, however, you can occasionally receive an encoded message which PMDF could not deliver in its decoded form to VMS MAIL owing to limitations of VMS MAIL itself.

QUALIFIERS

/ENCODING=type

This qualifier controls the type of decoding used to decode the input file. The possible values for this qualifier are BASE64, CBASE64 (gzip compressed BASE64), BASE85, BINHEX (encoding only, not the file format), BTOA, HEXADECIMAL, PATHWORKS, QUOTED_PRINTABLE, UUENCODE, CUUENCODE (gzip compressed UUENCODE). If the /HEADER qualifier is specified, then it should not be necessary to specify the encoding used as this should be given in the message header. The /ENCODING qualifier will override the header specification if it is used.

/FILENAME

/NOFILENAME (default)

When the /FILENAME qualifier is used, the output-file-spec is treated as a default file specification and as much as possible of the file name, if any, specified in the Content-type: header line is used to generate the actual output file name. The default is /NOFILENAME in which case any file name specified in the Content-type: header line is ignored.

/HEADER

/NOHEADER (default)

This qualifier controls whether or not the encoded file begins with a MIME-compliant header. /NOHEADER is the default. When /NOHEADER is used, the /ENCODING qualifier is usually needed to specify the encoding since it cannot be determined from the header. To decode material that begins with a MIME-compliant header, *e.g.*, specifying the encoding used, use the /HEADER qualifier.

Utilities

DECODE

EXAMPLES

The following example illustrates a typical scenario: SUE@SAMPLE.COM wants to send an executable program to BOB@EXAMPLE.COM. To do this, Sue might issue the following two commands:

```
$ PMDF ENCODE/ENCODING=BASE64 PROGRAM.EXE PROGRAM.TXT
$ MAIL/SUBJECT="Bob, here's the program" PROGRAM.TXT
"IN%" "BOB@EXAMPLE.COM" "
```

When Bob receives this mail message he should issue the following commands:

```
$ MAIL
MAIL> EXTRACT/NOHEADER PROGRAM.TXT
MAIL> EXIT
$ ! Remove any extra material at the beginning and ending of the file.
$ PMDF DECODE/ENCODING=BASE64 PROGRAM.TXT PROGRAM.EXE
```

After decoding the file, Bob can now proceed to run PROGRAM.EXE.

Note that Sue could also have used PMDF MAIL's SEND command to bypass the need to use PMDF ENCODE in the first place. The use of this command to send binary files is described in Section 1.1.8.

ENCODE— Encode binary files

Encodes a binary file into a printable format for transmission as an e-mail message. Encoded files can be decoded with the DECODE utility. Both the standard MIME encodings as well as a few additional encodings (e.g., UUENCODE) are supported.

restrictions *None.*

SYNTAX **PMDF ENCODE** *input-file-spec encoded-file-spec*

Qualifiers	Defaults
<i>/ENCODING=type</i>	<i>/ENCODING=BASE64</i>
<i>/FILENAME</i>	<i>/NOFILENAME</i>
<i>/HEADER</i>	<i>/NOHEADER</i>

prompts Input file: *input-file-spec*
Output file: *encoded-file-spec*

PARAMETERS

input-file-spec

Specifies the name of an input file. The input file can be any OpenVMS file including binary files, keyed indexed files, or files with extended semantics such as DDIF files. Only a single input file can be specified; wildcards are not allowed.

encoded-file-spec

The name of the file to produce as output. The file output by ENCODE will contain all of the information necessary to reconstruct the original input file. The format of the output file is described in the Description section below.

DESCRIPTION

PMDF DECODE and ENCODE have been, for the most part, made obsolete by PMDF MAIL. If you use PMDF MAIL, then files which you send with the SEND command will be encoded automatically, if necessary. Encoded messages which you receive will be decoded automatically, if necessary, and can simply be extracted to a file with the EXTRACT command. If, however, you do not use PMDF MAIL, then read on.

The ENCODE and DECODE utilities are provided with PMDF as a means of transmitting OpenVMS binary files via MAIL. With ENCODE, a file can be encoded in a format which uses short records containing only printable characters. Such files can then be transmitted through most any mail system without being altered (e.g., lines wrapped, characters removed or replaced, etc.). ENCODE preserves all file contents and all file attributes when encoding a file. The contents and

Utilities

ENCODE

attributes are properly restored when decoded with DECODE. Absolutely any type of OpenVMS file can be transmitted with these two utilities — even indexed files with multiple keys and files with extended semantics such as DDIF files.

Encoded files have two parts. The first part is a conventional RFC 822 message header. Header lines are used to describe the file format; this information includes a conventional OpenVMS FDL (file description language) description of the file and a description of the encoding used to convert the file into a printable form for transfer. ENCODE creates this header; DECODE reads it and uses the information it contains to reconstruct the file.

Note: Many encoded messages received with PMDF are automatically decoded for you, thus obviating the need to use PMDF DECODE at all. This is especially true when you use PMDF MAIL whose EXTRACT command will extract any MIME encoded message or message body part. If you use VMS MAIL, however, you can occasionally receive an encoded message which PMDF could not deliver in its decoded form to VMS MAIL owing to limitations of VMS MAIL itself.

QUALIFIERS

/ENCODING=type

This qualifier controls the type of encoding used to encode the input file. The possible values for this qualifier are BASE64, CBASE64 (gzip compressed BASE64), BASE85, BINHEX (encoding only, not the file format), BTOA, HEXADECIMAL, PATHWORKS, QUOTED_PRINTABLE, UUENCODE, CUUENCODE (gzip compressed UUENCODE). BASE64 encoding is the default; this is also the default decoding type used by DECODE.

/FILENAME

/NOFILENAME (default)

When used in conjunction with the /HEADER qualifier, this qualifier specifies that the filename should be included in the MIME headers generated. Only the name and extension portion of the file specification will be used; any node, device, directory, and version number information will be discarded. *This qualifier does not specify the input file to use; only the name to use for the name parameter of the Content-type: header line and the filename parameter of the Content-disposition: header line.* By default, no filename parameter is specified in the Content-type: or Content-disposition: header lines.

Or if used with /ENCODING=UUENCODE, the /FILENAME qualifier causes the filename to be included on the “begin 600” line.

/HEADER

/NOHEADER (default)

This qualifier controls whether or not a MIME-compliant header is placed at the beginning of the output. /HEADER is the default. /NOHEADER is used to produce output suitable for use in non-MIME messaging applications. Note that all structural information about the file is lost when /NOHEADER is used.

FOLDER— Place message in mail folder

Place a message file into a VMS MAIL mail folder.

restrictions *None.*

SYNTAX **PMDF FOLDER** *message-file-spec[,...] [folder-name
[mail-file-spec]]*

Qualifiers	Defaults
<i>/BLANK</i>	<i>/NOBLANK</i>
<i>/CC=address</i>	<i>None</i>
<i>/FROM=address</i>	<i>See text</i>
<i>/SUBJECT=test</i>	<i>None</i>
<i>/TO=address</i>	<i>See text</i>

prompts Message file: *message-file-spec[,...]*
Folder: *folder*
Mail file: *mail-file-spec*

PARAMETERS

message-file-spec[,...]

One or more files to place into the specified mail folder; wildcards are not allowed.

folder-name

Optional name of the VMS MAIL folder in which to place the message.

mail-file-spec

Optional name of VMS MAIL mail file in which to place the message.

DESCRIPTION

The FOLDER utility is used by the PMDF DELIVER utility to place mail messages in a user's VMS MAIL mail folder. Read and write privileges are required to place a message in the mail folder of another user. This utility is intended primarily for use by DELIVER; system managers and users are unlikely to find it useful in and of itself.

All of the specified input files will be placed in the specified mail folder as a single mail message. Unless the /BLANK qualifier is specified, there will be no separators placed between each file as delimiters.

Utilities FOLDER

The optional **folder-name** parameter specifies the name of the VMS MAIL folder in which to place the message. If not supplied, then the message will be placed in the NEWMAIL folder.

If the option *mail-file-spec* parameter is not specified, then the default mail file for the specified user will be used. If /MM is used this parameter is meaningless and is not allowed.

QUALIFIERS

/BLANK

/NOBLANK (default)

When placing multiple files into a folder, a blank line can optionally be used to separate each file. Use the /BLANK qualifier to select this option; by default no separators are used.

/CC

/NOCC (default)

This qualifier can be used to specify the contents of the CC: line associated with the mail message being created. If no /CC qualifier is specified, then a blank CC: line will be generated.

/FROM

/NOFROM (default)

This qualifier can be used to specify the contents of the FROM: line associated with the mail message being created. If no /FROM qualifier is specified, then the FROM: line is blank.

/SUBJECT

/NOSUBJECT (default)

This qualifier can be used to specify the contents of the SUBJECT: line associated with the mail message being created. If no /SUBJECT qualifier is specified, then a blank SUBJECT: line will be generated.

/TO

/NOTO (default)

This qualifier can be used to specify the contents of the TO: line associated with the mail message being created. If no /TO qualifier is specified, then the TO: line is blank.

FORWARD— Set forwarding address

Sets a forwarding address in the PMDF alias database.

restrictions Nonprivileged users can only set or modify their own alias.

SYNTAX **PMDF FORWARD** [*forwarding-address*]

Qualifiers	Defaults
/ADD	/ADD
/USER	See text
/SUBADDRESS	None
/DELETE	/ADD

PARAMETERS

forwarding-address

The forwarding address the alias will point at. The address is specified in RFC 822 format. Quoting might be required to preserve case or to enclose special characters such as at signs, @.

DESCRIPTION

The FORWARD utility is designed to provide controlled access to the system alias database for regular unprivileged users. Users can establish an alias for the address corresponding to their own username, or any subaddresses associated with their address. There are no restrictions on what the alias is directed to. A privileged user can use this utility to set up a system alias for any address.

If no parameter is given FORWARD simply displays current forwarding information from the alias database without changing it.

PMDF FORWARD also checks to see if a logical name of the form PMDF_**forwarding-address**_PATTERN is defined. If such a logical name is defined, PMDF will translate it and use the equivalence name as the **forwarding-address**. The equivalence name is also scanned and the following substitutions are performed:

1. \$U and \$u are replaced with the username whose forwarding address is being set. Subaddresses are removed; only the actual username is substituted.
2. \$F and \$f are replaced with the address being forwarded. This includes both the username and any subaddresses.
3. \$D and \$d are not replaced with anything, but if present set a flag that causes the alias to be deleted if it already exists.

Utilities

FORWARD

4. \$\$ is replaced with a single \$; \$ followed by any other character is replaced with just the character.

System managers enable the FORWARD utility by creating an alias database with the CRDB utility. This can be done with the command

```
$ PMDF CRDB NLA0: PMDF_ALIAS_DATABASE
```

Skip this step if you already have an alias database.

QUALIFIERS

/ADD

Add the entry to the database. This is the default action.

/USER=username

This qualifier is used to specify an alternate user whose alias is to be modified. The default is to modify an alias for the user of the FORWARD utility. SYSNAM privilege is required to set an alias for another user. If using the /USER qualifier, specify it before any other qualifiers.

/SUBADDRESS=subaddress

Specifies a subaddress to be set. Subaddresses are addresses that are explicitly qualified by the username they are associated with; they have a local-part of the form *username+subaddress*. The /SUBADDRESS and /USER qualifiers are mutually exclusive. Note that subaddresses can be set by using a username of the form *username+subaddress* in conjunction with /USER; this qualifier is simply a convenience for users who want to set subaddresses for themselves.

/DELETE

The /DELETE qualifier tells FORWARD to delete the specified alias. No parameter is allowed if this qualifier is used.

EXAMPLES

Assuming that the logical name PMDF_YMIR_PATTERN has an equivalence string of \$U@YMIR.BITNET, the command

```
$ PMDF FORWARD/USER=JOHN YMIR
```

would set up an alias for user NED that translates to the address JOHN@YMIR.BITNET.

migrate—Copy messages from one system to another system

UNIX-style command utility to copy folders of messages from one system running an IMAP server to another system running an IMAP server.

SYNTAX **migrate** *-fromhost source-IMAP-host -fromuser source-username -frompass source-password -tohost destination-IMAP-host -touser destination-username -topass destination-password [optional-options]*

Qualifiers	Defaults
<i>-batch</i>	Move in batch mode without prompting; see text
<i>-debug n</i>	Specify level of debugging
<i>-freq n</i>	How frequently to report messages moved
<i>-fromport port</i>	Specify a non-default port number
<i>-fromprefix folder-prefix</i>	See text
<i>-fromrecon n</i>	Reconnect to source host periodically
<i>-h</i>	Print help message
<i>-log file-spec</i>	Log operations to specified file
<i>-lower</i>	Destination folder names will be lowercased
<i>-maxerr n</i>	Maximum number of errors to allow before aborting
<i>-noempty</i>	Skip empty folders
<i>-noinbox</i>	Skip INBOX on source host
<i>-nowastebasket</i>	Skip WASTEBASKET on source host
<i>-public</i>	Copy public folders
<i>-recover</i>	Attempt to recover if there is a communication failure
<i>-toport port</i>	Specify a non-default port number
<i>-toprefix folder-prefix</i>	See text
<i>-torecon n</i>	Reconnect to destination host periodically

prompts

Enter TCP/IP name of host to move from:	<i>source-IMAP-host</i>
Enter TCP/IP name of host to move to:	<i>destination-IMAP-host</i>
<i>{source-IMAP-host}</i> username:	<i>source-username</i>
<i>{source-IMAP-host}</i> password for <i>username</i> :	<i>source-password</i>
<i>{destination-IMAP-host}</i> username:	<i>destination-username</i>
<i>{destination-IMAP-host}</i> password for <i>username</i> :	<i>destination-password</i>
Move <i>n</i> messages in <i>source-folder</i> to which folder:	<i>destination-folder</i>

PARAMETERS

Utilities

migrate

source-IMAP-host

The fully qualified TCP/IP name of the system from which to copy messages. The system must be running an IMAP server.

source-username

The username of the account on the source system.

source-password

The password of the account on the source system.

destination-IMAP-host

The fully qualified TCP/IP name of the system to which to copy messages. The system must be running an IMAP server.

destination-username

The username of the account on the destination system.

destination-password

The password of the account on the destination system.

source-folder-prefix

A string specifying what folders to copy from.

destination-folder-prefix

A string specifying what folders to copy to.

DESCRIPTION

`migrate` is a UNIX-style utility for copying folders of messages from one system to another. Each system must have an IMAP server running.

The `migrate` utility must be defined as a foreign command before it can be used:

```
$ migrate ::= "$PMDF_EXE:MIGRATE"
```

You can run `migrate` interactively or in batch mode. To run it interactively, you will be prompted for the names of the systems to move from and to, as well as the usernames and passwords. If all the required arguments are specified, then `migrate` will run in automatic or batch mode, moving all messages from all folders to the destination system, using the same name for destination folders. With the optional `-batch` qualifier, you can skip the interactive confirmation prompt before each folder is copied. With the `-fromprefix` qualifier, you can specify a folder prefix for the source system; with the `-toprefix` qualifier, you can specify a folder prefix for the destination system. And with the `-lower` qualifier you can specify that the destination folder names should be lowercased. If you want to skip empty folders, specify `-noempty`. If you want public folders to be copied over as well, specify `-public`.

Assuming that the source system is VMS, the folders INBOX and WASTEBASKET are not skipped. If you want to skip the INBOX folder, specify `-noinbox`. If you want to skip the WASTEBASKET folder, specify `-nowastebasket`.

There can be a communications failure to either the source host or the destination host or both. By default, `migrate` exits immediately upon failure. Specify `-recover` to have `migrate` attempt recovery after a communications failure. Similarly, there can be problems in the IMAP servers on either the source or destination, such as the servers running out of memory if there are many folders with many large messages being migrated. Specify `-fromrecon` or `-torecon` to have `migrate` periodically disconnect and reconnect to the source or destination IMAP server.

QUALIFIERS

-batch

Do not prompt for confirmation of what folders to move.

-debug n

This qualifier enables debug output. *n* is a bit-encoded integer, with bits:

- 1 prints out progress/delay/login/logout messages
- 2 prints certain responses received, but not full message text
- 4 prints responses received, including full message text
- 8 prints commands sent

-freq n

Specify how frequently to report messages moved. Defaults to every 100 messages during copy.

-fromport port

Specify the IMAP port on the source system. The default is `-fromport 143`, the standard IMAP port.

-fromprefix folder-prefix

Specify the folder prefix for the source mailbox, if not the default mail file. For instance, if migrating from a PMDF IMAP server on OpenVMS system, the folder prefix would typically have the form `#disk:[dir]mailfile.mai#` or if migrating from an IMAP server on a UNIX system, the folder prefix would be a UNIX file specification (the UNIX default typically being `mail/`).

-fromrecon n

This qualifier tells `migrate` to disconnect and reconnect to the source host IMAP server every *n* number of messages. The default is to never disconnect and reconnect.

-h

Print help text.

-log file-spec

Specify a file in which to log operations.

-lower

Lowercase the folder names for the destination system.

Utilities

migrate

-maxerr *n*

Specify the maximum number of errors that can be encountered before aborting. The default, if this qualifier is not specified, is to continue after all errors.

-noempty

Skip copying empty folders.

-noinbox

By default, the INBOX folder (which Pine users have as a synonym for NEWMAIL) is not skipped when copying folders; the **-noinbox** qualifier instructs PMDF to skip this folder.

-nowastebasket

By default, the WASTEBASKET folder is not skipped when copying folders; the **-nowastebasket** qualifier instructs PMDF to skip this folder.

-public

Copy public folders on the source host. The default is to not copy folders with these prefixes: "Other Users/", "Public Flders/", "user.". Specifying the **-public** qualifier instructs PMDF to not skip such folders.

-recover

Attempt recovery if there is a communications failure to one of the IMAP servers. The default is to not attempt recovery, but to exit instead.

-toport *port*

Specify the IMAP port on the destination system. The default is `-toport 143`, the standard IMAP port.

-toprefix *folder-prefix*

Specify the folder prefix for the destination mailbox, if not the default mail file. For instance, if migrating to a PMDF IMAP server on OpenVMS system, the folder prefix would typically have the form `#disk:[dir]mailfile.mai#` or if migrating to an IMAP server on a UNIX system, the folder prefix would be a UNIX file specification (the UNIX default typically being `mail/`).

-torecon *n*

This qualifier tells migrate to disconnect and reconnect to the destination host IMAP server every *n* number of messages. The default is to never disconnect and reconnect.

EXAMPLES

1

```
$ migrate := "$PMDF_EXE:MIGRATE"  
$ migrate  
From which host: admin.example.com  
Username on admin.example.com: alonso  
Password for alonso on admin.example.com:  
To which host: hq.example.com  
Username on hq.example.com: alonso  
Password for alonso on hq.example.com:  
Move 15 messages in sentmail to which folder (CR to skip): SENTMAIL  
Move 4 messages in mail to which folder (CR to skip):   
... Skipping mail
```

In this example user alonso on admin.example.com also has an account on hq.example.com with two folders, mail and sentmail, and is copying the messages in the sentmail folder on admin.example.com to the SENTMAIL folder on hq.example.com.

PASSWORD—Set remote authentication password

Set password for remote authentication, e.g., POP client (APOP), IMAP client (CRAM), or mailbox filter authentication.

SYNTAX

PMDF PASSWORD [*password*]

Command Qualifiers	Defaults
<i>/CREATE</i>	<i>/CREATE</i>
<i>/DELETE</i>	<i>/CREATE</i>
<i>/SERVICE=keyword</i>	<i>/SERVICE=DEFAULT</i>
<i>/SHOW</i>	<i>/CREATE</i>
<i>/TEST</i>	<i>/CREATE</i>

restrictions

All operations other than setting, deleting, or verifying one's own password require privileges.

prompts

Password: *password*

PARAMETERS

password

The password to set. Note that password entries are case sensitive. And at the protocol level, note that passwords used for APOP and CRAM-MD5 authentication are case sensitive. If specifying the password on the DCL command line, be sure to quote any password containing lower case characters; DCL will forcibly upper case the password value if it is not quoted.

DESCRIPTION

The PMDF PASSWORD utility is used to add and change password entries in the PMDF password database. Such entries can be used for special authorization purposes. Whether you need to use this utility will depend on your site's configuration. If you use the VMS MAIL message store from POP or IMAP clients, then you might need to. Otherwise you probably will not; for instance, PMDF MessageStore users and PMDF popstore users typically do not need to be concerned with password database entries. See Section 10.1 for a further discussion of the PMDF PASSWORD utility as it relates to POP and IMAP client usage. And check with your system administrators if you are uncertain about whether you need to use this utility (to set a PMDF password database entry or entries).

Typically, if you use the PMDF PASSWORD utility at all you would use it to create just a DEFAULT service entry. However, it is possible to instead have service specific entries; a single user can have separate entries for separate services, such as an entry for the IMAP service (preferentially used when authenticating during IMAP connections), and an entry for the POP service (preferentially used when authenticating during POP connections). Authentication checks preferentially for an appropriate service specific entry, but if a service specific entry is not present then falls through to checking the DEFAULT service entry.

**COMMAND
QUALIFIERS**

/CREATE

Add a new password database entry. This qualifier is the default.

/DELETE

Delete a user/password entry pair from the PMDF password database.

/SERVICE=keyword

Specify for what service a particular password method and password value apply. The default service keyword is DEFAULT; POP3 and IMAP are other possible keywords.

/SHOW

Show a user/service/password-method entry in the PMDF password database. Note that this command does not show the password value.

/TEST

Compare a specified password against a password stored in the PMDF password database.

EXAMPLES

To set your password, with prompting so that the password is not displayed on the screen as you type it, issue the command:

```
$ PMDF PASSWORD  
Password:
```

ERROR MESSAGES

%PMDf-E-CANOPNPASS, Password file does not exist or cannot be opened

The PMDF password database does not exist, or could not be opened. Check with your system administrator.

%PMDf-E-ENTLONGPASS, Entry too long to fit in password file

The password entry is too long; try using a shorter password value.

Utilities

PASSWORD

%SYSTEM-F-NOWORLD, operation requires WORLD privilege

You have insufficient privileges for the attempted operation.

PS—Text to PostScript

Convert text and Runoff .MEM output files to PostScript.

restrictions This utility is supplied only with the PMDF-FAX optional layered product.

SYNTAX **PMDF PS** *input-file-spec* [*output-file-spec*]

Qualifiers	Defaults
<i>/BOTTOM_MARGIN=margin</i>	<i>/BOTTOM_MARGIN=72</i>
<i>/CALCULATE</i>	None
<i>/CHARSET=charset_name</i>	<i>/CHARSET=US-ASCII</i>
<i>/COLUMNS=columns_per_page</i>	<i>/COLUMNS=1</i>
<i>/END_PAGE=page_number</i>	See text
<i>/FONT=font</i>	<i>/FONT=COURIER</i>
<i>/FORM=form_type</i>	<i>/FORM=LETTER</i>
<i>/HEIGHT=form_height</i>	<i>/HEIGHT=11</i>
<i>/ITALIC</i>	<i>/UNDERLINE</i>
<i>/LANDSCAPE</i>	<i>/PORTRAIT</i>
<i>/LEFT_MARGIN=margin</i>	<i>/LEFT_MARGIN=72</i>
<i>/LINES=lines_per_page</i>	None
<i>/MAIL</i>	None
<i>/NUMBER_PAGES</i>	<i>/NONUMBER_PAGES</i>
<i>/PORTRAIT</i>	<i>/PORTRAIT</i>
<i>/SIZE=font_size</i>	<i>/SIZE=12</i>
<i>/SPACING=spacing_factor</i>	<i>/SPACING=1</i>
<i>/START_PAGE=page_number</i>	<i>/START_PAGE=1</i>
<i>/TOP_MARGIN=margin</i>	<i>/TOP_MARGIN=72</i>
<i>/UNDERLINE</i>	<i>/UNDERLINE</i>
<i>/WIDTH=form_width</i>	<i>/WIDTH=8.5</i>

prompts Input file: *input-file-spec*
Output file: *output-file-spec*

PARAMETERS

input-file-spec

The name of the text or Runoff .MEM file to convert to PostScript. Only a single file can be specified; wildcards cannot be used.

output-file-spec

An optional parameter specifying the name of the file to which to write the PostScript. If no file name is specified, then the output file will have the same name as the input file but with a file extension of .PS.

Utilities

PS

DESCRIPTION

PS converts normal text files to PostScript (PS) files that can be printed or displayed on PostScript devices. The PS utility can also translate Runoff .MEM files to Postscript.

PostScript graphics can be inserted into the text at any point. The PostScript graphics should be in a separate file and referenced in the text file being converted using the command sequence

```
`~`~{include file-spec}
```

with *file-spec* the name of the file containing the PostScript graphics (or commands) to insert. This command sequence can occur anywhere in the file and as often as desired. PS sets the PostScript coordinate system so that (0,0) corresponds to the position on the page where the next text to be converted to PostScript will be positioned, and then merges the PostScript code from the file into the PS output stream. The effect of this is that the lower left corner of the included image will appear just where the command sequence appeared in the text. The command sequence itself is removed and does not appear in the output. No blank space is reserved for the image; you must do this yourself in the text file.

PostScript commands can also be inserted directly into the text input file being processed. To do this, use the command sequence

```
`~`~{insert PostScript commands}
```

The inserted PostScript commands sequence will be preceded by a save operator and followed by a restore operator. As with the include command, space is not reserved for the output of the inserted PostScript commands.

Note: PS is part of the PMDF-FAX product. It is not part of the base PMDF distribution.

QUALIFIERS

/BOTTOM_MARGIN=margin

This is the distance, in points, from the bottom of the sheet of paper to the bottom of the last line of text which is to appear on the page. The default is 72 points (1 inch).

/CALCULATE

When supplied with a value for */LINES*, */CALC* will calculate the font size so that your output will fill the page less the top and bottom margins. */CALCULATE* will only make the font size large (or small) enough to fit the number of lines you specified onto the page. It will not check to see whether the horizontal length of your lines will fit within the left and right margins.

This command must be used with the */LINES* qualifier and cannot be used with the */SIZE* qualifier.

/CHARSET=charset_name

The character set used in the input text. Many character sets are supported; see the complete list in the file `PMDF_TABLE:CHARSETS.TXT`. PMDF PS will construct an appropriate encoding vector to render the character set as well as possible in PostScript.

Note that the selection of fonts can affect whether or not all characters can be correctly displayed. The Courier font works quite well; other fonts can lack some accented characters.

/COLUMNS=columns_per_page

`/COLUMNS` allows you to select the number of columns that your text will be printed in on a single sheet of paper. The default is 1 column per page.

/END_PAGE=page_number

This is the page number of the last page that will be included in the PostScript output file. The default is to print the entire file.

/FONT=font

By default, PS will set the document in the Courier font. With this qualifier, an alternate font can be selected. The name of the font to be used must be selected from the list shown in Table 9-1—the thirty-nine fonts listed in the table include the standard “Adobe 35” plus four additional fonts representing four faces of the Charter font family from Bitstream. Note that not all of these fonts are available on all printers; consult the printer documentation for information about what fonts a given printer supports.

Table 9-1 Font Names Recognized by the PS Utility

AvantGarde-Book, AvantGarde-Demi, AvantGarde-Oblique, AvantGarde-DemiOblique
Bookman-Light, Bookman-Demi, Bookman-LightItalic, Bookman-DemiItalic
Charter-Roman, Charter-Bold, Charter-Italic, Charter-BoldItalic
Courier, Courier-Bold, Courier-Oblique, Courier-BoldOblique
Helvetica, Helvetica-Bold, Helvetica-Oblique, Helvetica-BoldOblique
Helvetica-Narrow, Helvetica-Narrow-Bold, Helvetica-Narrow-Oblique, Helvetica-Narrow-BoldOblique
NewCenturySchlbk-Roman, NewCenturySchlbk-Bold, NewCenturySchlbk-Italic, NewCenturySchlbk-BoldItalic
Palatino-Roman, Palatino-Bold, Palatino-Italic, Palatino-BoldItalic
Symbol
Times-Roman, Times-Bold, Times-Italic, Times-BoldItalic
ZapfChancery-MediumItalic
ZapfDingbats

/FORM=form_type

Specifies a form type that the output device is currently using. The possible values are given in Table 9-2. A letter size form (8.5 inches wide by 11 inches long) is the default. The size of the output page can also be set using the `/HEIGHT` and `/WIDTH` qualifiers.

Table 9–2 Form Names Recognized by the PS Utility

Form name	Dimensions (vertical height x horizontal width)
LETTER	8.5 x 11 inches
LEGAL	8.5 x 14 inches
LEDGER	11 x 17 inches
GLETTER	8 x 10 inches
GLEGAL	8 x 13 inches
FOLIO	8.3 x 13 inches
A0	841 x 1189 millimeters
A1	594 x 841 millimeters
A2	420 x 594 millimeters
A3	297 x 420 millimeters
A4	210 x 297 millimeters
A5	148.5 x 210 millimeters
A6	105 x 148.5 millimeters
B0	1000 x 1414 millimeters
B1	707 x 1000 millimeters
B2	500 x 707 millimeters
B3	353 x 500 millimeters
B4	250 x 353 millimeters
B5	176 x 250 millimeters
B6	125 x 176 millimeters
A	8.5 x 11 inches
B	11 x 17 inches
C	17 x 22 inches
D	22 x 34 inches
E	34 x 44 inches
LP	13.7 x 11 inches
VT	8 x 5 inches

/HEIGHT=form_height

Specifies the height in inches of the form to use. The default is 11 inches (792 points). The height is also set by the /FORM qualifier. The /HEIGHT qualifier will override the /FORM qualifier if both are specified.

/ITALIC

/ITALIC mode is used with Runoff files. /ITALIC will replace all text that is flagged for underlining with italicized print. The default is to underline text flagged for underlining.

/LANDSCAPE

This option produces output that is wider than it is tall. This may or may not actually rotate the image; it depends on the size of the form that is used. With letter size output (the default), the output is rotated. Choose this option when you have very long lines to print, but do not want to set the size of your font very small or when using /COLUMNS=2.

/LEFT_MARGIN=margin

With this qualifier, you can specify, in points, the distance from the left edge of the sheet of paper to the left margin of your text. The default is 72 points (1 inch).

/LINES=lines_per_page

This is the number of lines to appear on a page, starting at the top margin. By default, PS merely attempts to place as many lines on the page as possible; each line displaced vertically below the previous line by amount $\text{font_size} * \text{spacing_factor}$; font_size has the default value of 12 points (10 points for FAXes) and spacing_factor has the default value of 1.

/MAIL

This qualifier instructs PS that no file is to be processed. Instead, the qualifiers specified on the command line will modify any text-to-PostScript conversions performed by the PMDF message distribution system (e.g., messages processed by the PMDF-FAX channels). This is achieved through the use of the `PMDF_X_PS_QUALIFIERS` logical which PS will set. Currently, the only application which makes use of this logical is the optional layered product PMDF-FAX.

Any mail subsequently sent that gets converted into PostScript will be converted in the manner specified. Any settings made by a previous use of the `/MAIL` qualifier are lost. Settings only last for the life of a given login session; they must be re-established in subsequent sessions (this can be done in a `LOGIN.COM` file if desired).

/NUMBER_PAGES

/NONNUMBER_PAGES (default)

Pages will automatically be numbered when the `/NUMBER_PAGES` qualifier is specified. By default, pages are not numbered.

/PORTRAIT (default)

This option produces output that is taller than it is wide. This may or may not actually rotate the image; it depends on the size of the form that is used.

/SIZE=font_size

This is the size, in points, of the font to be used. The default size is 12 points for converted documents; mail system text-to-PostScript conversion defaults to 10 points. The minimum size is 4 points; the maximum size is limited to the size of a normal letter size sheet of paper.

Note that `/SIZE` is not restricted to integer values—a font size of 10.5 is both acceptable and often times useful.

/SPACING=spacing_factor

This qualifier specifies the vertical line spacing. `/SPACING=2` yields double-spaced output while `/SPACING=3` results in triple-spaced output. Spacing factor can be any positive number and is not limited to integral values. The actual spacing in points between lines is given by the product $\text{font_size} * \text{spacing_factor}$.

/START_PAGE=page_number

This is the page number of the first page that will be included in the PostScript output file. The default is to print the entire document.

/TOP_MARGIN=margin

This is the distance, in points, from the top of the sheet of paper to the first line of text. The default is 72 points (1 inch).

Utilities

PS

/UNDERLINE (default)

/UNDERLINE mode is used with Runoff files. To generate PostScript to underline the text in a Runoff .MEM file that is flagged for underlining, use the */UNDERLINE* qualifier.

/WIDTH=form_width

Specifies the width, in inches, of the form to use. The default is 8.5 inches. The width is also set by the */FORM* qualifier. The */WIDTH* qualifier will override the */FORM* qualifier if both are specified.

EXAMPLES

1 \$ PMDF PS THESIS.TXT

In this example, the name of the output file is omitted. Consequently, the output will be stored in a file named thesis.ps.

2 \$ PMDF PS/FONT=BOOKMAN-LIGHT THESIS.TXT

This command illustrates the use of the */FONT* qualifier to select an alternate font.

3 \$ PMDF PS/COLUMNS=2/LANDSCAPE/SIZE=8 THESIS.TXT

This last command shows how to format the file THESIS.TXT for printing in two columns. When more than one column is requested, use of the */LANDSCAPE* qualifier is recommended. Furthermore, the font size should be reduced with the */SIZE* qualifier so as to keep lines of text from running into adjacent columns or off of the page.

PSWRAP— Wrap lines in a PostScript file

Convert a PostScript file to a file which can be mailed without requiring encoding or other special handling.

restrictions This utility cannot produce correct output for some PostScript files.

SYNTAX **PMDF PSWRAP** *input-file-spec* [*output-file-spec*]

Qualifiers	Defaults
<i>/RECORD_LENGTH=width</i>	<i>/RECORD_LENGTH=76</i>

prompts Input file: *input-file-spec*
Output file: *output-file-spec*

PARAMETERS

input-file-spec

The name of the PostScript file to process. Only a single file can be specified; wildcards cannot be used.

output-file-spec

An optional parameter specifying the name of the new PostScript file to output. If no file name is specified, then the output file will have the same name as the input file.

DESCRIPTION

The PSWRAP utility can be used to convert a PostScript file to a file with varying length records, carriage return carriage control, and no record longer than the specified length.

WARNING: This utility cannot produce correct output for some PostScript files. PostScript files contain complex programs written in the PostScript language. The PSWRAP utility understands the PostScript language syntax and can perform syntactically correct line wrappings. However, some PostScript files contain data which cannot be wrapped, for instance, input to the PostScript “readstring” operator. Short of actually interpreting the PostScript file, it is not possible to *determine* whether or not it is safe to wrap lines in the file.¹ The PSWRAP utility ignores this issue and as such could output non-functioning PostScript. Be sure to test (*e.g.*, print) the output of PSWRAP before mailing it to someone else or deleting

¹ After a determination has been made, the underlying PostScript program represented by the file must be rewritten.

Utilities

PSWRAP

the input file. QuarkXPress, for example, produces output which PSWRAP will not properly wrap.

If a readstring operator is seen in the PostScript file, a PMDF-W-READSTRSEEN warning message will be output.

QUALIFIERS

/RECORD_LENGTH=length

Maximum record length to allow in the output file. If not specified, a length of 76 bytes will be imposed.

EXAMPLES

In the following example the file JACS_PAPER2.PS is processed and the new file JACS.PS output. The resulting file is then printed to assure validity and then mailed to another user.

```
$ PMDF PSWRAP JACS_PAPER2.PS JACS.PS
$ PRINT/QUEUE=PS_PRINTER/NOTIFY JACS.PS
Job JACS (queue PS_PRINTER, entry 741) started on PS_PRINTER
$
Job JACS (queue PS_PRINTER, entry 741) completed
$ MAIL/SUBJECT="Latest draft" JACS.PS "IN%" "BOB@EXAMPLE.COM"
```

SEND— Send a mail message

Sends a mail message using PMDF.

restrictions *None.*

SYNTAX **PMDF SEND** *message-file-spec[,...] recipient-address[,...]*

Qualifiers	Defaults
<i>/ABORT</i>	<i>See text</i>
<i>/COMMENTS=comment</i>	<i>None</i>
<i>/DELIVERY_RECEIPT_TO</i>	<i>None</i>
<i>/ERRORS_TO=address</i>	<i>None</i>
<i>/EXPAND_LIMIT=limit</i>	<i>None</i>
<i>/EXTRA=header_line</i>	<i>None</i>
<i>/FAX</i>	<i>See text</i>
<i>/FROM=address</i>	<i>See text</i>
<i>/HEADERS</i>	<i>/NOHEADERS</i>
<i>/IGNORE</i>	<i>See text</i>
<i>/IMPORTANCE=importance</i>	<i>None</i>
<i>/KEYWORDS=keywords</i>	<i>None</i>
<i>/LOG=log-list</i>	<i>/NOLOG</i>
<i>/MULTIPART</i>	<i>None</i>
<i>/ORGANIZATION=organization</i>	<i>None</i>
<i>/PRIORITY=priority</i>	<i>None</i>
<i>/READ_RECEIPT_TO</i>	<i>None</i>
<i>/REFERENCES=references</i>	<i>None</i>
<i>/REPLY_TO=address</i>	<i>None</i>
<i>/RETURN_ADDRESS=address</i>	<i>See text</i>
<i>/RFROM=address</i>	<i>None</i>
<i>/RREPLY_TO=address</i>	<i>None</i>
<i>/SENSITIVITY=sensitivity</i>	<i>None</i>
<i>/SUBADDRESS=subaddress</i>	<i>None</i>
<i>/SUBJECT=subject</i>	<i>None</i>
<i>/USER=username</i>	<i>See text</i>
<i>/WARNINGS_TO=address</i>	<i>None</i>
<i>/X_PS_QUALIFIERS=qualifiers</i>	<i>None</i>

Positional Qualifiers	Defaults
<i>/BCC</i>	<i>/TO</i>
<i>/CC</i>	<i>/TO</i>
<i>/ENCODING=encoding</i>	<i>See text</i>
<i>/FILENAME=name</i>	<i>/NOFILENAME</i>
<i>/MODE=mode</i>	<i>/MODE=TEXT</i>
<i>/TO</i>	<i>/TO</i>

Utilities

SEND

prompts Message file: *message-file-spec[,...]*
 Address: *recipient-address*

PARAMETERS

message-file-spec[,...]

One or more files to comprise the message; wildcards are not allowed. Each file is included in the mail message as a separate part.

recipient-address

The recipients who are to receive copies of the message. Standard RFC 822 format addresses must be used. Quoting might be needed to preserve case and special characters. This parameter is optional when the /FAX qualifier is used.

DESCRIPTION

The SEND utility provides a simple easy-to-use interface to PMDF for sending messages.

QUALIFIERS

/ABORT

By default, if an error occurs while processing an input message file or recipient address, PMDF SEND will ask the user whether or not to send the message anyhow. If the /ABORT qualifier is specified, then PMDF SEND will merely exit (with an error) when a problem occurs during file or address processing.

The /ABORT and /IGNORE qualifiers are mutually exclusive — only one or the other can be used.

/BCC

Positional parameter which can be used to specify that the given recipient address, and subsequent recipient addresses, should be treated as Bcc: addresses. By default, recipient addresses are interpreted as To: addresses.

/CC

Positional parameter which can be used to specify that the given recipient address, and subsequent recipient addresses, should be treated as Cc: addresses. By default, recipient addresses are interpreted as To: addresses.

/COMMENTS=comments

This qualifier can be used to specify the contents of the Comments: header line. If this qualifier is not used, any existing Comments: header line is used; if none exists no Comments: header line will appear in the outgoing message unless the PMDF_COMMENTS logical is defined.

/DELIVERY_RECEIPT_TO=address

This qualifier can be used to specify the contents of the Delivery-receipt-to: header line. If this qualifier is not used, any existing Delivery-receipt-to: header line is used; if none exists, no Delivery-receipt-to: header line will appear in the outgoing message.

/ENCODING=encoding

Specify the encoding method to use to encode an input message file. Normally, no encoding is used; however, this depends upon the file type as determined by the file extension. The available encoding methods are BASE32, BASE64, CBASE64 (compressed base64), BASE85, BINHEX, BTOA HEXADECIMAL, PATHWORKS, QUOTED_PRINTABLE, UUENCODE, and CUUENCODE (compressed UUENCODE). No encoding can be specified for a file containing header information (/HEADERS).

/ERRORS_TO=address

This qualifier can be used to specify the contents of the Errors-to: header line. If this qualifier is not used, any existing Errors-to: header line is used; if none exists no Errors-to: header line will appear in the outgoing message unless the PMDF_ERRORS_TO logical is defined.

/EXPAND_LIMIT=limit

If, during the process of expanding the message's recipient addresses, the count of recipients exceeds the specified limit then the address expansion will be deferred. PMDF SEND will expand the addresses "off-line" so that the user need not wait.

/EXTRA=header_line

Additional header lines can be specified with the /EXTRA qualifier. Specify the entire text of the header line; *e.g.*, /EXTRA="X-Sign: Aquarius". Multiple header lines should be specified using the format /EXTRA=(hdr1,hdr2,...).

/FAX

When the /FAX qualifier is specified, the pop-up FAX addressing form is invoked. The message being sent will be sent to the addresses specified via pop-up form as well as any additional addresses specified with the recipient address parameter.

/FILENAME=name***/NOFILENAME (default)***

This positional qualifier, when specified, causes the name of the input file to be included as a parameter to the associated MIME Content-type: header line. You can specify the name to be included in the header line, or if you do not specify a name, by default the name of the input file will be used.

/FROM=address

This qualifier can be used to specify the contents of the From: header line. If this qualifier is not used, any existing From: header line is used; if none exists and the PMDF_FROM logical is not defined, then a From: header line will be constructed from the username of the user invoking SEND and from the local host name. Note that even if a From: address is provided your address will appear in a Sender: header line.

/HEADERS***/NOHEADERS (default)***

The input message is assumed to have no header attached to it by default. The /HEADERS qualifier tells SEND that a header is already attached to the message; it is modified and used to form the header for the message that is actually sent.

/IGNORE

By default, if an error occurs while processing an input message file or recipient address, PMDF SEND will ask the user whether or not to send the message anyhow. If the /IGNORE qualifier is specified, then PMDF SEND will not ask

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SEND

the user whether or not to send the message — it will send the good input files to the good recipient addresses.

The `/ABORT` and `/IGNORE` qualifiers are mutually exclusive — only one or the other can be used.

/IMPORTANCE=importance

This qualifier can be used to specify the contents of the Importance: header line. If this qualifier is not used, any existing Importance: header line is used; if none exists no Importance: header line will appear in the outgoing message unless the `PMDF_IMPORTANCE` logical is defined.

/KEYWORDS=keywords

This qualifier can be used to specify the contents of the Keywords: header line. If this qualifier is not used, any existing Keywords: header line is used; if none exists no Keywords: header line will appear in the outgoing message unless the `PMDF_KEYWORDS` logical is defined.

/LOG=log-list

Specify what sort of informational message `PMDF SEND` should issue. The log-list is a list of zero or more of the following: `NONE`, `ADDRESSES`, `FILES`, `MESSAGES`, `IDS`, or `ALL`. `NONE` indicates no logging, is equivalent to `/NOLOG`, and is the default. `ADDRESSES` causes one informational message to be output for each specified recipient address. `FILES` causes one information message to be output for each input file. `MESSAGES` produces a summary message that indicates how many addresses and files were processed successfully. `IDS` produces an informational message showing the contents of the Message-Id: header of the resulting message. `ALL` activates all forms of logging; it cannot be specified simultaneously with `NONE`. `/LOG=MESSAGES` is the default if `/LOG` is specified without an explicit log-list.

/MODE=mode

Specify the file access mode to use when reading an input message file. By default, input files are read in text mode. The access modes are `TEXT`, `RECORD`, `CRATTRIBUTE`, `LFATTRIBUTE`, `CRLFATTRIBUTE`, and `BLOCK`. A file containing header information must be accessed using `TEXT` mode.

/MULTIPART

This qualifier may be used to tell `pmdf send` to always format the messages it sends as multipart MIME messages.

/ORGANIZATION=organization

This qualifier can be used to specify the contents of the Organization: header line. This qualifier is ignored if an Organization: header line is already present. If this qualifier is not specified or negated no Organization: header line is added unless the `PMDF_ORGANIZATION` logical is defined.

/PRIORITY=priority

This qualifier can be used to specify the contents of the Priority: header line. If this qualifier is not used, any existing Priority: header line is used; if none exists no Priority: header line will appear in the outgoing message.

/READ_RECEIPT_TO=address

This qualifier can be used to specify the contents of the Read-receipt-to: header line. If this qualifier is not used, any existing Read-receipt-to: header line is used; if none exists, no Read-receipt-to: header line will appear in the outgoing message.

/REFERENCES=references

This qualifier can be used to specify the contents of the References: header line. If this qualifier is not used, any existing References: header line is used; if none exists no References: header line will appear in the outgoing message unless the PMDF_REFERENCES logical is defined.

/REPLY_TO=address

This qualifier can be used to specify the contents of the Reply-to: header line. If this qualifier is not used, any existing Reply-to: header line is used; if none exists no Reply-to: header line will appear in the outgoing message unless the PMDF_REPLY_TO logical is defined.

/RETURN_ADDRESS=address

Specify the address to be used as the envelope originator address. If the message is returned as undeliverable by the mail system transport the nondelivery notice is normally sent to this address.

/RFROM=address

This qualifier can be used to specify the contents of the Resent-From: header line. If this qualifier is not used, any existing Resent-From: header line is used; if no such header line exists no Resent-From: header line will be attached to the outgoing message.

/RREPLY_TO=address

This qualifier can be used to specify the contents of the Resent-Reply-to: header line. If this qualifier is not used, any existing Resent-Reply-to: header line is used; if no such header line exists no Resent-Reply-to: header line will be attached to the outgoing message.

/SENSITIVITY=sensitivity

This qualifier can be used to specify the contents of the Sensitivity: header line. If this qualifier is not used, any existing Sensitivity: header line is used; if none exists no Sensitivity: header line will appear in the outgoing message unless the PMDF_SENSITIVITY logical is defined.

/SUBADDRESS=subaddress

Specify a subaddress to attach to the envelope From: address; *e.g.*, if the envelope From: address is rex@example.com then specifying /SUBADDRESS="Postmaster" would result in the envelope From: address rex+Postmaster@example.com.

/SUBJECT=subject

This qualifier can be used to specify the contents of the Subject: header line. If this qualifier is not used, any existing Subject: header line is used; if none exists no Subject: header line will appear in the outgoing message.

/TO

Positional parameter which can be used to specify that a given recipient address should be treated as a To: address, which is the default interpretation.

/USER=username

Specify the local username to use in the message sender's address; (this will be the From: address if no other From: address is given and the Sender: address otherwise). You must either have WORLD privilege or hold the PMDF_WORLD or PMDF_WORLD_username rightslist identifier in order to use this qualifier and specify a username other than your own. The special case of a blank string will not insert any Sender: information.

Utilities

SEND

/WARNINGS_TO=address

This qualifier can be used to specify the contents of the Warnings-to: header line. If this qualifier is not used, any existing Warnings-to: header line is used; if none exists no Warnings-to: header line will appear in the outgoing message unless the PMDF_WARNINGS_TO logical is defined.

/X_PS_QUALIFIERS=qualifiers

This qualifier can be used to specify the contents of the X-ps-qualifiers: header line. If this qualifier is not used, any existing X-ps-qualifiers: header line is used; if none exists no X-ps-qualifiers: header line will appear in the outgoing message unless the PMDF_X_PS_QUALIFIERS logical is defined.

EXAMPLES

1 \$ PMDF SEND/SUBJECT="Test message" MSG.TXT "BOB@EXAMPLE.COM"

This command will send as a mail message the contents of the file MSG.TXT to the address BOB@EXAMPLE.COM. The Subject: line of the message will read "Subject: Test message".

2 \$ PMDF SEND/SUBJECT="Test message" -
_ \$ /EXTRA=("X-Favorite-Drink: Hot chocolate",-
_ \$ "X-IQ: 20/20") MSG.TXT "BOB@EXAMPLE.COM"

Send a message to BOB@EXAMPLE.COM with the header lines

```
Subject: Test message
X-Favorite-Drink: Hot chocolate
X-IQ: 20/20
```

(Of course, these will not be the only header lines present.)

3 \$ PMDF SEND/HEADERS MSG.TXT "BOB@EXAMPLE.COM"

Send a message to BOB@EXAMPLE.COM. By using the /HEADERS qualifier, MSG.TXT is assumed to already contain the headers for the message as well as the body.

9.2 QM: Manipulate Your Queued Messages

PMDF QM is a utility program which allows inspection and manipulation of queued messages. While QM has two modes, maintenance mode and user mode, unprivileged users can only use the user mode. From user mode, you can obtain listings of all “queued” messages which you have sent but which are still on your system awaiting delivery.² You can read or return any of your queued messages, and, in the case of outgoing PMDF-FAX messages, change FAX telephone numbers.

Note that this utility merely reports on messages in PMDF’s delivery queues. That a message you have sent no longer appears in PMDF’s queues, does not imply that it has reached its final destination. All that it means is that the message has left the PMDF system and is no longer under PMDF’s control. For example, it is not uncommon for a message to make an intermediate stop on another system such as a mail hub. In such cases, PMDF will consider the message to be “delivered” when it hands the message and responsibility for it off to the intermediate system.

To run PMDF QM, issue the command

```
$ PMDF QM
```

Use the EXIT or QUIT command to exit QM. The commands accepted by this utility in user mode are summarized in Table 9–3 and are described in Section 9.2.1.

9.2.1 Available User Mode Commands

In this section, the available user mode PMDF QM commands are described.

Table 9–3 Summary of PMDF QM User Mode Commands

DATE	Show current date and time
DIRECTORY	List currently queued messages
EDIT_FAX	Edit a queued PMDF-FAX message
EXIT	Exit the utility
HELP	Obtain help
HISTORY	Display message delivery history information
QUIT	Exit the utility
READ	Display message envelope and header information
RETURN	Return a message to its originator
SPAWN	Spawn a subprocess

² Usually, when you send a message an immediate attempt is made to deliver it. Should that attempt fail owing to a temporary problem such as a network outage, the message will be queued in the mail system’s delivery queues. Subsequent, periodic attempts will be made to deliver the message until either it is delivered or it is determined to be undeliverable in which case it is returned to you. Messages are typically returned as undeliverable because the address turns out to be incorrect; *e.g.*, the destination system does not recognize the recipient address or the destination system is unreachable.

PMDF QM commands

DATE

DATE

Show the current date and time.

SYNTAX

DATE

Command Qualifiers	Defaults
--------------------	----------

None.

None.

PARAMETERS

None.

DESCRIPTION

The `DATE` command can be used to show the current date and time, in RFC 822/1123 format — the same format as used in Internet-style messages.

EXAMPLES

In the following example, the current date and time in RFC 822/1123 format is displayed with the `DATE` command.

```
qm.user> DATE
Fri, 2 Aug 2012 13:34:16 PDT
qm.user>
```

DIRECTORY

List currently queued messages.

SYNTAX **DIRECTORY** *[type]*

Command Qualifiers	Defaults
<i>None.</i>	<i>None.</i>

PARAMETERS

type

An optional parameter specifying the type of messages to display (*e.g.*, FAX, Internet, cc:Mail, *etc.*). Wild cards are permitted.

DESCRIPTION

Use the `DIRECTORY` command to list any messages which you've sent but which have not yet been delivered. The optional ***type*** argument can be used to restrict the listing to certain types of messages such as messages sent to the Internet or other TCP/IP connected machines such as UNIX workstations, cc:Mail users, FAX machines, *etc.* A complete list of the available types are shown below. You can also use the ? key to obtain a listing of the available types as shown in the examples below.³

Type	Message Types Listed
all_in_1	Messages sent to ALL-IN-1 users
bitnet	Messages sent to BITNET users
ccmail	Messages sent to Lotus cc:Mail users
dechnet	Messages sent to DECnet users
fax	Messages sent as FAXes via PMDF-FAX
groupwise	Messages to GroupWise Office users
internet	Messages sent to Internet users
local	Messages sent to local VMS MAIL users
lotus_notes	Messages sent to Lotus Notes users
mailbus_400	Messages sent to MAILbus 400 users
mailworks	Messages sent to MailWorks users
message_router	Messages sent to Message Router users

³ Note for system managers: unlike QM's maintenance mode, in user mode the directory listing is always generated from the queue cache database.

PMDF QM commands

DIRECTORY

Type	Message Types Listed
microsoft_mail	Messages sent to Microsoft Mail users
netdata	Messages sent to Netdata (PROFS) users
novell_mhs	Messages sent to Novell MHS users
ovvm	Messages sent to OV/VM (PROFS) users
pager	Messages sent to personal pagers
popstore	Messages sent to popstore users
snads	Messages sent to SNADS users
tcpip	Messages sent to TCP/IP users
teamlinks	Messages sent to TeamLinks users
uucp	Messages sent to UUCP users
wordperfect	Messages sent to WordPerfect Office users
x400	Messages sent to X.400 users

In the directory listing, each message is assigned a message identification number, or “message id” for short. The message id appears in the leftmost column. These identification numbers can be used with the READ, RETURN, and EDIT_FAX commands to identify which messages to read, return, or edit.

It is important to note that when you send a message to more than one recipient, the message might split into multiple message copies. Consequently, the same message might appear multiple times as being queued to different networks (or possibly even for the same network). Such would be the case for a message sent both to local users and remote users.

EXAMPLES

```
1 qm.user> DIRECTORY ?
Optional keyword, must be chosen from:
(1) all_in_1           Messages sent to ALL-IN-1 users
(2) bitnet            Messages sent to BITNET users
(3) ccmail            Messages sent to cc:Mail users
(4) decnet            Messages sent to DECnet users
(5) fax               Messages sent as FAXes with PMDF-FAX
(6) groupwise         Messages sent to GroupWise Office users
(7) internet          Messages sent to Internet users
(8) local             Messages sent to local users
(9) lotus_notes       Messages sent to Lotus Notes users
(10) mailbus_400      Messages sent to MAILbus 400 users
(11) mailworks        Messages sent to MailWorks users
(12) message_router   Messages sent to Message Router users
(13) microsoft_mail   Messages sent to Microsoft Mail users
(14) netdata          Messages sent to Netdata (PROFS) users
(15) novell_mhs       Messages sent to Novell MHS users
(16) ovvm             Messages sent to OV/VM (PROFS) users
(17) pager            Messages sent to personal pagers
(18) popstore         Messages sent to popstore users
(19) snads            Messages sent to SNADS users
(20) tcpip            Messages sent to TCP/IP users
```

PMDF QM commands

DIRECTORY

```
(21) teamlinks           Messages sent to TeamLinks users
(22) uucp                Messages sent to UUCP users
(23) wordperfect        Messages sent to WordPerfect Office users
(24) x400                Messages sent to X.400 users
qm.user>
```

This example shows how to obtain a list of the recognized message types. Whenever you are entering a command, you can always press the question mark key, `?`, to obtain help on what to type next.

2

```
qm.user> DIRECTORY
Fri, 2 Aug 2012 18:49:40 PDT
```

Id	Network	From	To	Size	Queued since
1	Internet (TCP/IP)	bob@example.com	service@example.com service@internode.co	8	2-AUG 17:31
2	Internet (TCP/IP)	bob@example.com	ietf-822@dimacs.rut	8	2-AUG 15:07
3	Internet (TCP/IP)	bob@example.com	mwalnut@cnri.reston	16	2-AUG 15:26
4	Internet (TCP/IP)	bob@example.com	jbakin@adoc.xerox.c	8	2-AUG 17:18
5	Internet (TCP/IP)	bob@example.com	klensin@MAIL1.RESTO	16	2-AUG 15:26
6	Internet (TCP/IP)	bob@example.com	MAILSERV@EXAMPLE.C	8	2-AUG 15:38
7	Internet (TCP/IP)	bob@example.com	john@EXAMPLE.COM	8	2-AUG 17:18
8	Message Router	bob@example.com	john%doof@am.naples.	8	2-AUG 12:25
9	Local delivery	bob@example.com	john	8	2-AUG 16:11
10	Internet (TCP/IP)	bob@example.com	mailserv@example.org	8	2-AUG 12:43
11	Internet (TCP/IP)	bob@example.com	MARKJOSEPH@delphi.com	8	2-AUG 15:07

Total size: 104

```
qm.user>
```

In this example, the `DIRECTORY` command is used to list all queued messages. When a message has more than one envelope `To:` recipient, the additional recipients are shown on additional lines of the listing as with message 1 which is addressed to `service@example.com` and `service@internode.com.au`.

PMDF QM commands

EDIT_FAX

EDIT_FAX

Edit a queued PMDF-FAX message.

SYNTAX **EDIT_FAX** [*message-id*[,...]]

Qualifiers	Defaults
<i>/ALL</i>	<i>/NOALL</i>
<i>/CONFIRM</i>	<i>/NOCONFIRM</i>
<i>/LOG</i>	<i>/LOG</i>

PARAMETERS

message-id

A comma separated list of one or more message identification numbers shown with a previous `DIRECTORY` command. Ranges are allowed.

DESCRIPTION

The addresses of queued FAX messages can be edited so as, for instance, to correct a FAX telephone number. The messages to be edited are specified by their message identification numbers shown by the most recent `DIRECTORY` command. Those numbers appear in the leftmost column of the `DIRECTORY` command listing.

QUALIFIERS

/ALL

/NOALL (default)

Edit all messages shown by the last `DIRECTORY` command.

Unless `/NOCONFIRM` is specified with `/ALL`, you will be required to confirm any `EDIT_FAX/ALL` operation.

/CONFIRM

/NOCONFIRM (default)

When `/CONFIRM` is specified, you will be prompted to confirm each message edit operation.

/LOG (default)

/NOLOG

Specifies whether informational messages for each message edit operation are generated.

EXIT

Exit the PMDF QM utility.

SYNTAX

EXIT

Command Qualifiers	Defaults
--------------------	----------

None.

None.

PARAMETERS

None.

DESCRIPTION

The EXIT and QUIT commands exit the PMDF QM utility.

PMDF QM commands

HELP

HELP

Obtain help on the use of PMDF QM.

SYNTAX **HELP** *[topic]*

Command Qualifiers

None.

Defaults

None.

PARAMETERS

topic

Optional topic to obtain help on.

DESCRIPTION

The **HELP** command can be used to obtain information on PMDF QM commands. To obtain information on all of the PMDF QM commands, use the command

```
qm.user> HELP
```

To obtain information on individual commands or topics use the command

```
qm.user> HELP topic
```

where *topic* is the name of the command or topic of interest.

HISTORY

Display message history information.

SYNTAX

HISTORY [*message-id*[,...]]

Command Qualifiers

/ALL
/CONFIRM

Defaults

/NOALL
/NOCONFIRM

PARAMETERS

message-id

A comma separated list of one or more message identification numbers shown with a previous `DIRECTORY` command. Ranges are allowed.

DESCRIPTION

For many channels, delivery history information is appended to the end of each message file after an unsuccessful delivery attempt has been made. With the `HISTORY` command, this information can be displayed.

The messages to show histories for are specified by their message identification numbers shown by the most recent `DIRECTORY` command. That number appears in the leftmost column of the `DIRECTORY` command listing.

Note that history information is not recorded by some channels.

QUALIFIERS

/ALL

/NOALL (default)

Display history information for all messages shown with the last `DIRECTORY` command.

/CONFIRM

/NOCONFIRM (default)

When */CONFIRM* is specified, you will be prompted to confirm whether or not to display the history for each selected message.

PMDF QM commands

QUIT

QUIT

Exit the PMDF QM utility.

SYNTAX

QUIT

Command Qualifiers	Defaults
--------------------	----------

None.

None.

PARAMETERS

None.

DESCRIPTION

The `EXIT` and `QUIT` commands exit the PMDF QM utility.

READ

Read a message.

SYNTAX **READ** *[message-id[,...]]*

Qualifiers	Defaults
<i>/ALL</i>	<i>/NOALL</i>
<i>/CONFIRM</i>	<i>/NOCONFIRM</i>
<i>/CONTENT</i>	<i>/CONTENT</i>

PARAMETERS

message-id

A comma separated list of one or more message identification numbers shown with a previous `DIRECTORY` command. Ranges are allowed.

DESCRIPTION

The `READ` command can be used to read one or more queued messages. The messages to display are specified by their message identification numbers shown by the most recent `DIRECTORY` command. Those numbers appear in the leftmost column of the `DIRECTORY` command listing.

QUALIFIERS

/ALL

/NOALL (default)

Display all messages shown with the last `DIRECTORY` command.

/CONFIRM

/NOCONFIRM (default)

When `/CONFIRM` is specified, you will be prompted to confirm whether or not to display each selected message.

/CONTENT (default)

/NOCONTENT

Specify `/NOCONTENT` if you only want to read the message envelope and header.

PMDF QM commands

READ

EXAMPLES

In the following example, message 3 is displayed.

```
qm.user> READ 3
Message id: 3

Transport layer information:
-----
Envelope From: address: doej@example.com
Envelope To: addresses: jones

Message header:
-----
Received: from EXAMPLE.COM by EXAMPLE.COM (PMDF V5.0-1 #8790)
 id <01HNPFR0P5OW9D4GAS@EXAMPLE.COM> for BERNOULLI@EXAMPLE.COM; Fri,
 02 Aug 2012 16:48:41 -0700 (PDT)
Date: Fri, 02 Aug 2012 16:48:40 -0700 (PDT)
From: John Doe <doej@example.com>
To: jones@example.com
Subject: sea voyage
Message-id: <01HNPFR12JYA9D4GAS@EXAMPLE.COM>
MIME-version: 1.0
Content-type: TEXT/PLAIN; CHARSET=US-ASCII
Content-transfer-encoding: 7BIT

Message content:
-----
Would you be interested in taking a short cruise to Nova Scotia?

- DoeJ

qm.user>
```

RETURN

Return a message to its sender.

SYNTAX **RETURN** *[message-id[,...]]*

Qualifiers	Defaults
<i>/ALL</i>	<i>/NOALL</i>
<i>/CONFIRM</i>	<i>/NOCONFIRM</i>
<i>/LOG</i>	<i>/LOG</i>

PARAMETERS

message-id

A comma separated list of one or more message identification numbers shown with a previous `DIRECTORY` command. Ranges are allowed.

DESCRIPTION

Queued messages can be returned to their originator with the `RETURN` command. The messages to be returned are specified by their message identification numbers shown by the most recent `DIRECTORY` command. Those numbers appear in the leftmost column of the `DIRECTORY` command listing.

QUALIFIERS

/ALL

/NOALL (default)

Return all messages shown by the last `DIRECTORY` command. Unless `/NOCONFIRM` is specified with `/ALL`, you will be required to confirm any `RETURN/ALL` operation.

/CONFIRM

/NOCONFIRM (default)

When `/CONFIRM` is specified, you will be prompted to confirm each message return operation.

/LOG (default)

/NOLOG

Specifies whether informational messages for each message return operation are generated.

SPAWN

Create a subprocess.

SYNTAX **SPAWN** [*command*]

Qualifiers	Defaults
<i>/INPUT=in-file-spec</i>	<i>None</i>
<i>/LOGICAL_NAMES</i>	<i>/LOGICAL_NAMES</i>
<i>/OUTPUT=out-file-spec</i>	<i>None</i>
<i>/PROCESS=name</i>	<i>None</i>
<i>/SYMBOLS</i>	<i>/SYMBOLS</i>
<i>/WAIT</i>	<i>/WAIT</i>

restrictions Cannot be used from a captive account.

PARAMETERS

command

Optional parameter specifying the command string for the subprocess to execute. After the command completes, the subprocess terminates and control is returned to the parent process.

DESCRIPTION

The SPAWN command can be used to either issue a single DCL command from within PMDF QM or to leave PMDF QM temporarily, do other work (*e.g.*, type out a file, generate a directory listing, *etc.*), and then return to PMDF QM.

By default, the context of the current process is copied to the subprocess. This behavior can be controlled with the */LOGICAL_NAMES* and */SYMBOLS* qualifiers.

QUALIFIERS

/INPUT=in-file-spec

Specifies an input command file from which the subprocess is to draw command input. Once command processing is completed, the subprocess terminates. When you specify both a command string and input file, then the command string is first processed and then the commands from the input file.

/LOGICAL_NAMES (default)

/NOLOGICAL_NAMES

The */LOGICAL_NAMES* qualifier specifies that the logical names of the parent process are to be copied to the subprocess. This is the default behavior. Specify

/NOLOGICAL_NAMES to prevent the subprocess from inheriting the logical name definitions of its parent.

/OUTPUT=out-file-spec

Specifies the output file to which the output of the subprocess is to be directed. If the */OUTPUT* qualifier is omitted, then subprocess output is directed to the current SYSS\$OUTPUT device (generally, your terminal).

/PROCESS=name

Specifies the process name to associate with the subprocess. If not specified, a default name of the form USERNAME_n, where "USERNAME" is your username, is used.

/SYMBOLS (default)

/NOSYMBOLS

The */SYMBOLS* qualifier specifies that the DCL symbol definitions of the parent process are to be copied to the subprocess. This is the default behavior. Specify */NOSYMBOLS* to prevent the subprocess from inheriting the symbol definitions of its parent.

/WAIT (default)

/NOWAIT

By default, your current (parent) process will wait until the subprocess has finished its processing and terminated. This default behavior is explicitly selected with the */WAIT* qualifier. The */NOWAIT* qualifier allows you to continue working from your current process while the subprocess is running. When you specify */NOWAIT*, you should also specify the */OUTPUT* qualifier so as to prevent the subprocess output from appearing on your terminal screen.

EXAMPLES

```
1 qm.user> SPAWN DIRECTORY/SIZE=ALL A.TXT
Directory D1: [BOB]
A.TXT;10      125/126
A.TXT;9       124/126
A.TXT;8       124/126
Total of 3 files, 373/378.
qm.user> SPAWN PURGE/LOG A.TXT
%PURGE-I-FILPURG, D1: [BOB]A.TXT;9 deleted (126 blocks)
%PURGE-I-FILPURG, D1: [BOB]A.TXT;8 deleted (126 blocks)
%PURGE-I-TOTAL, 2 files deleted (252 blocks)
qm.user>
```

In this example, the SPAWN command is used to obtain a directory listing of the files A.TXT, and then to purge back old versions of that file. The ability to do this is useful when you find that you have insufficient disk quota to create and edit a mail message you want to send.

PMDF QM commands

SPAWN

```
2 qm.user> SPAWN
    .
    .
    .
$ LOGOUT
  Process BOB_1 logged out at 23-AUG-2012 12:12:51.42
qm.user>
```

In this example a SPAWN command with no command string is issued. This places you into the subprocess where you can issue DCL commands and perform other processing. When you are done with the subprocess and ready to return to PMDF QM, use the LOGOUT or EOJ command.

9.3 DB: Personal Alias Database Utility

DB is a utility with which to create and manipulate an alias database. Alias databases can either be a personal alias database (pointed at by the logical PMDF_PERSONAL_ALIAS_DATABASE) or a system alias database. As the format of PMDF alias database is used for other PMDF databases (*e.g.*, PMDF_DOMAIN_DATABASE), DB can also be used to manipulate non-alias databases.

DB is invoked by the command

```
$ PMDF DB
```

and can be exited by either typing Control-Z or issuing the quit-program command.

9.3.1 Aliases

Aliases have multiple uses with e-mail. Individual users typically use aliases as abbreviations. For instance, rather than remember John Doe's full e-mail address, an alias JD can be created so that mail sent to the address JD is properly sent using John Doe's full address (*e.g.*, JD573@VAXC.EXAMPLE.COM). System managers often use aliases in order to create valid mail addresses for non-existent users. For instance, an alias named Postmaster might be created and equated with the username SYSTEM so that incoming network mail for the user Postmaster is routed to the SYSTEM account. These are just two examples of the many practical uses of aliases.

The process of interpreting an alias is called "alias expansion". In the two examples above, the aliases JD and Postmaster expand, respectively, to JD573@VAXC.EXAMPLE.COM and SYSTEM.

In this documentation, the expansion of an alias is represented with the following notation

```
alias-name → alias-value
```

For example, John → JD573@VAXC.EXAMPLE.COM.

PMDF alias names are "case insensitive". This means that the alias names jd, JD, jD, and Jd are all considered to be identical by PMDF; the case (upper *versus* lower case) of the individual characters in an alias name is irrelevant to PMDF. However, PMDF does preserve the case of alias values.

PMDF aliases can expand to:

- an address: JD → JD573@VAXC.EXAMPLE.COM,
- a list of addresses: STAFF → BOB@EXAMPLE.COM,SUE@EXAMPLE.COM,
- other aliases: JD → JOHND → JD573@VAXC.EXAMPLE.COM,
- a list of aliases: COMPANY → STAFF,ADMIN,FACULTY, or
- a mixture of addresses and aliases: LIST → STAFF,BOB@EXAMPLE.COM.

Utilities

DB: Personal Alias Database Utility

Note that in the above example, it is not clear whether or not the expanded value of an alias is another alias or not; *i.e.*, in “JD → JOHND”, JOHND could have been either an alias or a legitimate username. PMDF always starts by assuming that an address without any domain part (*e.g.*, @EXAMPLE.COM) is an alias and attempts to expand it. When expanding an alias, PMDF first tries to look up the alias in the user’s personal alias database and, if the alias is not found there, then PMDF consults system-level alias sources. After expanding an alias once, PMDF then tries to expand the result (or results in the case of a list). This expansion process is repeated until no more expansions are possible at which point the results are all assumed to be real mail addresses and not aliases.

By default, alias names can be from 1 to 80 characters long and their expansion values 0 to 252 characters. This corresponds to a “long” alias database file which is the type of file DB normally creates. When a “huge” alias database file is used, the maximum lengths of the alias names and their expansion values are, respectively, 80 and 1024 characters. When a “short” alias database file is used, the maximum lengths of the alias names and their expansion values are, respectively, 32 and 80 characters. Note that by default the system alias database created with the CRDB utility is a short alias database.

When specifying mail addresses within VMS MAIL or DECwindows MAIL, PMDF aliases must be specified using the format IN%alias-name. For example, mail addressed as follows

```
MAIL> SEND
To: IN%JD
```

would use PMDF’s alias for JD, if any exists. From PMDF MAIL, you can simply use JD rather than IN%JD.

System managers can find it useful to establish forwarding for commonly used system wide aliases. For example,

```
MAIL> SET FORWARD/USER=POSTMASTER IN%Postmaster
```

with Postmaster a PMDF alias (in the system alias database) which points to the user or users who should receive mail intended for the system’s postmaster. When this type of forwarding has been set up, users can then just send mail to the (fictitious) user POSTMASTER,

```
MAIL> SEND
To: POSTMASTER
```

and PMDF will route it to the proper individuals.

9.3.2 Public Aliases

If you want, other users can use aliases which you establish. This is particularly useful when you want to set up a mailing list which you want other people to post messages to. (See Section 9.3.3 for details on setting up mailing lists.) You allow other people to use specific aliases of yours by declaring those aliases to be public. This is done with the “attributes” parameter of the “set” command described in Section 9.3.7.12.

For example, let us assume that the user `sue@example.com` has already created an alias named `PIZZA-ORDER`. Then, to declare `PIZZA-ORDER` to be a public alias, Sue would use the command

```
db> set pizza-order public
```

Other users can then use this alias by sending mail to `sue+pizza-order@example.com`.

9.3.3 Mailing Lists

With PMDF DB you can create and maintain your own mailing lists. A mailing list is merely a collection of e-mail addresses with which you associate an alias. Or, looked at a little differently, a mailing list is an alias which expands to a list of e-mail addresses. When you address a mail message to the alias, it actually goes to all of the addressees listed in the mailing list. The act of sending a mail message to a mailing list is referred to as “posting”.

A mailing list is created in three steps:

1. Create a text file containing the list of e-mail addresses associated with the mailing list. Each address should be on a separate line in the file. The file itself is referred to as a “mailing list file”; the addresses in the file are the mailing list’s membership.
2. Set the protection of the mailing list file so that it is world readable

```
$ SET PROTECTION=(W:R) filename
```

Here, *filename* is the name of the mailing list file created in Step 1.

3. Choose an alias name, *alias-name*, to associate with the mailing list. Then, in PMDF DB, issue the commands

```
db> add alias-name "<filename">  
db> set alias-name public
```

filename should include a full path specification including the disk and directory name.

After these steps have been taken, the mailing list is set up and ready to use.

For example, suppose the user `sue@example.com` wants to set up a mailing list named `sample-list`. The members of the mailing list will be `bob@example.com`, `judy@example.com`, `ralph@sample.com`, and `sue@example.com`. Sue first creates the mailing list file `D1:[SUE]SAMPLE.DIS` which contains the four lines

```
bob@example.com  
judy@example.com  
ralph@sample.com  
sue@example.com
```

She then makes sure the distribution file is world readable by explicitly setting its protection with the DCL `SET PROTECTION` command,

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```
$ SET PROTECTION=(W:R) D1:[SUE]SAMPLE.DIS
```

Finally, Sue establishes the public alias FOO-LIST as follows:

```
$ PMDF DB
db> add foo-list "<d1:[sue]sample.dis"
db> set foo-list public
db> show foo-list attributes
Key          Value
-----
foo-list     <d1:[sue]sample.dis
Attributes:  public,no-expand,block-receipts,mail-address
[1 entries shown]
db>
```

By declaring the list to be public, Sue is allowing other people to post messages to this mailing list. They should do so by addressing their messages to `sue+sample-list@example.com`. Messages so addressed will then be received by the members of the list as specified by the contents of the file `D1:[SUE]SAMPLE.DIS`.

At any time you can add or remove members from the mailing list. You do so by simply editing the mailing list file removing or adding addresses from or to it.

As another example, mailing lists defined in LDAP can also be used, for example:

```
db> add ldap_all_users <""ldap:///dc=example,dc=edu?mail?sub?(cn=
```

Note the three double-quotes around the LDAP URL. This is required.

9.3.4 Advanced Mailing Lists

PMDF DB allows you to control who can or cannot post to mailing lists as well as associate error return, reply to, and other special addresses with mailing lists. To use these features, an extended alias specification must be used when declaring the alias for the mailing list:

```
db> add alias-name "<filename, named-parameters, error-return-address,
reply-to-address, errors-to-address, warnings-to-address, comments"
```

The *named-parameters* item is described in Section 9.3.4.1; the remaining items, called “positional parameters”, are described in Section 9.3.4.2.

The two positional parameters *error-return-address* and *reply-to-address* are two particularly useful items. You are strongly encouraged to use the *error-return-address* parameter so as to control where error messages concerning postings to your list are directed. You can use the *reply-to-address* parameter to make the preferred reply address the list address (or some other address).

9.3.4.1 Named Parameters

Named-parameters are used to associate options with a mailing list. There can be zero or more of named parameters, each separated by commas, and they must appear before any positional parameters. The general syntax of a named-parameter is:

```
[name] value
```

Here *name* is the name of the parameter and *value* is its corresponding value. The square brackets are a mandatory part of the syntax: they do not indicate an optional field.

The available named parameters are:

AUTH_LIST

CANT_LIST

AUTH_LIST is used to specify a list of addresses that are allowed to post to the mailing list. The *value* item must be the full file path specification for a world readable file containing the list of addresses allowed to post to the list. When someone attempts to post a message to the mailing list, PMDF will attempt to match their address against the addresses in the list; if no match occurs, the attempted posting will be sent to the owner of the list.

CANT_LIST has the opposite effect as **AUTH_LIST**: it supplies the full file path specification of a world readable file containing a list of addresses which cannot post to the list.

One common use of this facility is to restrict a list so that only list members can post. This can be done by specifying the same file as both the mailing list file and the **AUTH_LIST** file. For example, assuming that the mailing list is named `foo-list` and the associated file is `D1:[SUE]SAMPLE.DIS`, the alias declaration would be

```
db> add foo-list "<d1:[sue]sample.dis, [auth_list] d1:[sue]sample.dis"
```

An example of using **AUTH_LIST** can be found in Section 9.3.4.3.

BLOCKLIMIT

LINELIMIT

The **BLOCKLIMIT** and **LINELIMIT** parameters can be used to limit the size of messages that can be posted to the list. The *value* item must be an integer number of PMDF blocks, for **[BLOCKLIMIT]**, or an integer number of lines, for **[LINELIMIT]**. The size of a PMDF block is normally 1024 bytes. The default value for these parameters is 0, meaning that no limit is imposed on the size of message that can be posted to the list (apart, that is, from any system wide limits).

DELAY_NOTIFICATIONS

NODELAY_NOTIFICATIONS

The **DELAY_NOTIFICATIONS** named parameter requests that NOTARY delay notifications be sent for mailing list postings; the **NODELAY_NOTIFICATIONS** named parameter requests that NOTARY delay notifications not be sent for mailing list postings. The *value* specification is currently ignored and should always be `NONE`.

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HEADER_ADDITION

HEADER_ADDITION can be used to specify a file of headers to be added to posted messages. The argument must be a full file specification for the file containing headers to be added.

In particular this facility can be used to add the standard mailing list headers defined in RFC 2369. For instance, a user amy@example.com that has set up a public list named listname might use a header addition file along the lines of the following:

```
List-Help: <mailto:amy@example.com?subject=help%20on%20listname>
List-Subscribe: <mailto:amy@example.com?subject=subscribe%20listname>
List-Unsubscribe: <mailto:amy@example.com?subject=unsubscribe%20listname>
List-Post: <mailto:amy+listname@example.com>
List-Owner: <mailto:amy@example.com?Subject=listname>
List-Archive: <mailto:amy@example.com?subject=request%20listname%20archive>
```

IMPORTANCE

PRECEDENCE

PRIORITY

SENSITIVITY

The IMPORTANCE, PRECEDENCE, PRIORITY, and SENSITIVITY named parameters are used to generate respective headers on messages posted to the list; the *value* specification is inserted on the respective header line.

MODERATOR_ADDRESS

MODERATOR_LIST

The MODERATOR_ named parameters are used to establish a moderated mailing list. All postings to the list not originating from a moderator are sent to the list's moderator. The address of the moderator must be specified with the MODERATOR_ADDRESS named parameter. The moderator address determines where moderator mail is sent when someone other than the moderator posts. The value of that named parameter is the moderator's address. For example,

```
db> add test-list "<d1:[bob]test.dis, [MODERATOR_ADDRESS]
bob@example.com"
```

When there can be multiple moderator addresses (for instance, both robert@a1.example.com and bob@example.com) use MODERATOR_LIST to specify all addresses from which postings should be passed directly to the list and not sent to the list's moderator. MODERATOR_LIST specifies the name of a file containing a list of moderator addresses.

If a MODERATOR_LIST parameter is used, thereby specifying who can post directly to the list, then a MODERATOR_ADDRESS parameter should also be present to specify the address to which to send postings not from any moderator.

The use of the MODERATOR_ADDRESS parameter alone, without the MODERATOR_LIST parameter, is equivalent to using MODERATOR_ADDRESS and a MODERATOR_LIST consisting of just the one moderator address.

Note that one use of MODERATOR_ADDRESS and MODERATOR_LIST is to set up a list wherein anyone on the list can post directly, but attempts to post by addresses not subscribed to the list will be referred to a moderator. For instance,

```
db> add mem-list "<d1:[bob]mem-list.dis,
[MODERATOR_ADDRESS]bob@example.com,
[MODERATOR_LIST] d1:[bob]mem-list.dis"
```

SEQUENCE_PREFIX**SEQUENCE_SUFFIX****SEQUENCE_STRIP**

The SEQUENCE_PREFIX and SEQUENCE_SUFFIX named parameters request that a sequence number be prepended or appended to the Subject: lines of messages posted to the list. The *value* item gives the full file path specification of a sequence number file. This file is read, incremented, and updated each time a message is posted to the list. The number read from the file is prepended, in the case of SEQUENCE_PREFIX, or appended, in the case of SEQUENCE_SUFFIX, to the message's Subject: header line. This mechanism provides a way of uniquely sequencing each message posted to a list so that recipients can more easily track postings and determine whether or not they have missed any.

By default, a response to a previously posted message (with a previous sequence number) retains the previous sequence number as well as adding a new sequence number to the subject line; the build up of sequence numbers shows the entire "thread" of the message in question. However, the SEQUENCE_STRIP named parameter can be used to request that only the highest numbered, *i.e.*, most recent, sequence number be retained on the subject line. The *value* item is currently ignored and should always be NONE.

Important note: To ensure that sequence numbers are only incremented for successful postings, a SEQUENCE_PREFIX or SEQUENCE_SUFFIX named parameter should always appear as the last named parameter; that is, if other named parameters are also being used, the SEQUENCE_ named parameter should appear at the end of the list of named parameters.

Sequence number files are binary files and must have the proper file attributes and access permissions in order to function correctly. In particular, sequence number files must be writeable from the perspective of the PMDF user account. A PMDF user account must exist for sequence number files in personal alias databases to work properly. If your system administrators have not created a PMDF user account, then you will not be able to use this sequence numbering facility.

To create the file *seq-file-spec* with the proper attributes and access permissions for use as a sequence number file, issue the command:

```
$ CREATE/FDL=PMDF_COM:sequence_number.fdl seq-file-spec
```

TAG

The TAG named parameter can be used to prefix specified text to the Subject: header of posted messages. The *value* item should be the string to be added.

USERNAME

The USERNAME named parameter can be used to set the "username" that PMDF will consider to "own" these mailing list messages. For instance, the PMDF QM utility will allow that username to inspect and bounce messages in the queue resulting from expansion of this mailing list. The *value* item should be the username of the account to "own" the mailing list postings. Note that the username specified will be forced to uppercase.

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9.3.4.2 Positional Parameters

With one exception, the positional parameters in a mailing list specification provide alternate addresses to which certain sorts of list related activity should be directed (*e.g.*, an address to which errors should be sent to rather than back to the list itself).

The positional parameters are so named for a reason: their position in the comma separated list distinguishes which parameter is being specified. When more than one parameter (positional or otherwise) is specified, they must be separated by commas. If you want to specify a positional parameter but omit some which come first, then specify asterisks, *, for the positional parameters which you want to omit. For example,

```
db> add foo-list "<d1:[sue]sample.dis, *, *, sue@example.com"
```

Finally, to make the use of a positional parameter conditional, end the parameter value with an asterisk. In this case the value associated with the parameter will only be used if the corresponding message header line is not present in the message being posted to the list. (The asterisk will not appear in the message header should the parameter take effect.)

Without further ado, the positional parameters are:

error-return-address

error-return-address specifies an address to replace the message's regular envelope From: address as well as an address to be inserted into the header as an Errors-to: address. This header line is not generated if this address is not specified.

reply-to-address

The *reply-to-address* parameter specifies an address to be used as a Reply-to: address.

errors-to-address

The *errors-to-address* parameter specifies an address to be placed on the Errors-to: header, if this address should be different from the *error-return-address* that is used as the envelope From: address.

warnings-to-address

The *warnings-to-address* parameter specifies an address to be placed on the Warnings-to: header line. This header line is not generated if this address is not specified.

comments

The *comments* parameter specifies a string to be placed in a Comments: header line. This header line will add to any Comments: header lines already present in the message being posted to the list.

9.3.4.3 Examples

In this example, the user `sue@example.com` sets up a mailing list named `sample-list`. The mailing list file is the file `D1:[SUE]SAMPLE.DIS` and its contents are shown in Example 9-1. The commands used to set up the list are shown in Example 9-2. In that example, the `add` command must be entered as one line; it is shown broken into two lines for typographical reasons only. Mail is posted to the list by sending messages to the address `sue+sample-list@example.com`.

The use of the `AUTH_LIST` named parameter in the alias declaration restricts the list such that only members of the list can post to it. Two positional parameters, `errors-to-address` and `comments`, are also specified. The `errors-to-address` parameter specifies that error messages associated with the list should be sent to `sue@example.com`; the `comments` parameter generates a `Comments:` header line reading "Sue's sample list", which will appear in each posting to the list.

Example 9–1 Sample Mailing list: the Mailing List File

```
bob@example.com
judy@example.com
ralph@example.com
sue@example.com
```

Example 9–2 Sample Mailing List: Declaring the Alias

```
$ SET PROTECTION=(W:R) D1:[SUE]SAMPLE.DIS
$ PMDF DB
db> add sample-list "<d1:[sue]sample.dis,[auth_list]d1:[sue]sample.dis,
    sue@example.com,*,*,*,Sue's sample list"
db> set foo-list public
db> exit
```

9.3.4.4 Length Restriction on List Definitions

Keep in mind the length limit of alias expansion values of 252 characters when defining a more sophisticated mailing list with multiple parameters. Most lists can be suitably defined with just a few of the possible mailing list parameters discussed above. But if you have a list for which you really want to use a lot of parameters, then you might need to define the list in stages.

For instance, to define a list `friends-list` that has `MODERATOR_ADDRESS`, `MODERATOR_LIST`, `CANT_LIST`, `USERNAME`, and `IMPORTANCE` named parameters, as well as `error-return-address` and `comments` positional parameters, the list can be defined in two stages, using a subsidiary `friends-list-stage2` definition, *e.g.*,

```
db> add friends-list "<d1:[alan]friends-list-stage2.dis,
[MODERATOR_ADDRESS] alan@example.com, [MODERATOR_LIST] d1:[alan]friends-list.dis,
[CANT_LIST] d1:[alan]bozos.dis, [USERNAME] ALAN"
db> add friends-list-stage2 "<d1:[alan]friends-list.dis,
[IMPORTANCE] High, alan@example.com, *, *, *, A chatty message list for Alan's
friends -- contact Alan at 555-1212 for more information"
db> set friends-list public
```

where the `d1:[alan]friends-list-stage2.dis` file contains just the line:

```
friends-list
```

and the `d1:[alan]friends-list.dis` contains all the actual recipient addresses.

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9.3.5 Subaddresses

If you enter a subaddress into your personal alias database as a public alias, then you can have mail sent to you with that subaddress automatically forwarded. (See Section 2.3 for a description of subaddresses.) For example, suppose that your address is bob@example.com and mail to you from the STAFF mailing list arrives addressed to bob+staff@example.com. If you create a public alias for staff then mail to the address bob+staff@example.com will be forwarded to the address associated with the alias. For instance, the commands

```
db> add staff bob+staff@naples.example.com
db> set staff public
```

cause mail sent to bob+staff@example.com to be forwarded to bob+staff@naples.example.com.

9.3.6 Operation of DB

DB prompts for input with a “db>” prompt. Typing a control-z at any point while entering a command will cause DB to immediately stop execution. The quit-program command will also cause DB to stop execution.

The rest of the command line after the “PMDf DB” will be scanned for DB commands separated by backslashes, \; *i.e.*,

```
$ PMDF DB command1\command2...
```

Each command specified will be executed from left to right as the command line is scanned. Placing commands on the invocation line is optional; if any are specified DB will terminate after the last one has been executed. If no commands appear DB will operate by prompting the user for commands.

When first invoked, DB will open your personal alias database file which is pointed at by the logical PMDF_PERSONAL_ALIASES_DATABASE. PMDF establishes this logical at system startup as a system-wide logical equated with SYSSLOGIN:ALIASES.DAT. Users wanting to store their alias files elsewhere must redefine this logical for their process. Note, however, that relocation of this file will interfere with the proper operation of PMDF’s public alias features.

While entering DB commands to the “db>” prompt, the following command interaction features are available:

- Command abbreviation: commands can be abbreviated to their simplest, unambiguous form.
- Command completion: use the `TAB` key to automatically complete a command. If the command is ambiguous, it will be completed to the fullest extent possible.
- Command querying: at any point while entering a command, a question mark, `?`, can be entered to obtain immediate help on what to do next or what options are available.

- **Input files:** command files can be input and executed by using the command `<infile` with `infile` the name of the file to input. When two angle brackets are used, `<<infile`, the commands read from the input file will not be echoed as they are executed.
- **Logging:** your session can be logged to an output file by using the command `>outfile` with `outfile` the name of the log file. All commands you enter and information printed by DB will be written to the log file. To log only the commands you type, use the command `>>outfile`.
- **DCL commands:** typing a single dollar sign, `$`, will create and attach you to a spawned subprocess. To issue a DCL command from within DB, use the command `$ dcl-command` with `dcl-command` the DCL command you want to execute.

9.3.7 Commands

The following sections provide full descriptions of all DB commands. The syntax of the add and modify commands differs between DB's default mode of operation and the FAX mode invoked with the `fax-mode` command. The FAX mode versions of these commands are described under the `fax-mode` command description.

9.3.7.1 Add

Syntax: `add alias-name alias-value [attributes[...]]`

With the add command an alias and its expansion value can be added to the database currently opened. If the alias expansion value contains any spaces, commas, or upper case characters which should not be converted to lower case, then the expansion value must be enclosed in double quotes. Any double quotes in the expansion value must be "doubled" (*i.e.*, entered as two consecutive double quotes). Examples of these two cases are:

```
db> add STAFF "BOB@EXAMPLE.COM,SUE@EXAMPLE.COM,TOM@EXAMPLE.COM"
db> add JOHN-FAX """/FN=x8645/AT=Jo Doe/""@text-fax.EXAMPLE.com"
db> add LDAP-ALL <""ldap:///dc=example,dc=edu?mail?sub?(cn=*)""
```

The first add command establishes the alias

STAFF → BOB@EXAMPLE.COM,SUE@EXAMPLE.COM,TOM@EXAMPLE.COM

This alias required quoting since it included commas. The second add command establishes the alias

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JOHN-FAX → "/FN=x8645/AT=John Doe/"@text-fax.example.com

and was enclosed in double quotes because of the space in it, and the need to not convert John Doe's name to "john doe". Also, the double quotes present in the alias expansion value were doubled; that is, each double quote, ", was specified as two double quotes, "".

The third add command establishes the alias

LDAP-ALL → <"ldap:///dc=example,dc=edu?mail?sub?(cn=*)"

Which means that PMDF will expand the alias into a mailing list by performing an LDAP query using the LDAP URL specified.

As another example, consider entering the alias JD with the simple expansion value JD573@VAXC.EXAMPLE.COM:

```
db> add JD JD573@VAXC.EXAMPLE.COM
[Entry added to database]
db> show JD
Key          Value
-----
jd           jd573@vaxc.example.com
[1 entry shown]
db>
```

Note that the alias name along with its translation value was converted to lower case. DB will always translate the name of an alias to lower case; PMDF does not do case sensitive alias matching. To prevent the alias translation value from being converted to lower case, enclose it in double quotes; *e.g.*,

```
db> modify JD "JD573@VAXC.EXAMPLE.COM"
[1 entry modified]
db> show JD
Key          Value
-----
jd           JD573@VAXC.EXAMPLE.COM
[1 entry shown]
db>
```

The optional *attributes* parameter of the add command can be one or more comma separated keywords selected from the list:

mail-address

Treat this alias as a mail address; *i.e.*, set the mail address attribute flag for this alias. Default when in either normal or FAX mode. Not set when an "override on" command has been issued.

non-mail-address

Do not treat this alias as a mail address; *i.e.*, clear the mail address attribute flag for this alias.

fax-address

Treat this alias as a FAX address; *i.e.*, set the FAX address attribute flag for this alias. Default when in FAX mode. Not set when an "override on" command has been issued.

non-fax-address

Do not treat this alias as a FAX address; *i.e.*, clear the FAX address attribute flag for this alias.

public

Mark this alias as being publicly accessible. Other users can reference this alias by sending mail to an address of the form *user+alias@local-host*. When this alias is used in outgoing mail and is not expanded into component addresses, it will appear in the message in the form *user+alias@local-host*. Public is the opposite of the private attribute described below.

private

Mark this alias as being private. Other users will not be able to use this alias. If this alias appears in outgoing mail (and is not expanded into its component addresses) it will appear as an unexpanded RFC 822 group address: *alias: ;*. Private is the opposite of the public attribute described above.

expand

This attribute forces the expansion of the alias into its component addresses. All of the component addresses will be listed in the message header as the alias expands.

no-expand

This attribute inhibits the expansion of the alias into its component addresses. The alias itself will appear in the header in some form; see the description of the public and private attributes above for details on the forms the alias can take.

pass-receipts

This attribute enables the passage of requests for delivery and read receipts through to all recipients as the alias is expanded. Note that allowing the passage of such a request to a large distribution list can result in a lot of return mail.

block-receipts

This attribute disables the passage of requests for delivery and read receipts through to all recipients as the alias is expanded. Requests for such receipts are honored at the time the alias expands; in effect the alias is treated as the message destination.

When an alias is entered with the add command at the “db>” prompt, the alias will automatically be given the mail address attribute unless an “override on” command has been previously issued or the non-mail-address keyword is specified with the add command.

9.3.7.2 Close**Syntax:** close

The close command closes the currently open alias database. Use the open command to open a different database. DB will automatically close any open database when the exit-program or quit-program commands are issued.

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9.3.7.3 Copy

Syntax: *copy from-alias-name to-alias-name*

The copy command creates a new alias with the name *to-alias-name* and associates to it the expansion value of the alias with the name *from-alias-name*. A subsequent change to the “from” alias will not affect the “to” alias. Any attributes associated with the “from” alias will be copied to the “to” alias regardless of whether or not an “override on” command has been issued previously.

```
db> add Postmaster "system@thor.example.com"
[Entry added to database]
db> copy Postmaster Postmast
[1 entry copied]
db> show Post*
Key          Value
-----
postmast     system@thor.example.com
postmaster   system@thor.example.com
[2 entries shown]
db>
```

9.3.7.4 Exit-Program

Syntax: *exit-program*

The exit-program and quit-program commands are identical and each causes DB to close any open database and then exit. Note that in FAX mode there is no exit-program command, only an exit-mode command. To immediately exit DB from FAX mode, use the quit-program command.

9.3.7.5 Fax-Mode

Syntax: *fax-mode*

The fax-mode command puts you into FAX mode — a mode which attempts to simplify the creation and modification of aliases whose expansion values are FAX addresses. In this mode, the DB command prompt changes to “db.fax>”. To exit this mode use the command exit-mode. (From this mode there is no exit-program prompt; to immediately exit FAX mode, use the quit-program command.)

When in FAX mode, aliases created with the add command are given the attributes mail-address and fax-address. Only addresses with both of these attributes can be manipulated with the add, copy, modify, rename, remove, set, and show commands while in FAX mode. Note, however, that if the “override on” command has been issued, then all attribute checking is bypassed and no attributes will be assigned to aliases created with the add command.

In FAX mode, the add and modify commands have a different syntax than their counterparts in the normal DB mode. (Recall, you can always tell which mode you're in by the DB prompt: in normal mode the prompt is "db>"; in FAX mode the prompt is "db.fax>".)

9.3.7.5.1 Add (FAX Mode)

Syntax: add *alias-name* fax-number *number* domain *domain-name*
[[*item value*]...]

To add an alias in FAX mode, the alias name, FAX telephone number, and domain name (*e.g.*, text-fax.example.com) must all be supplied. If the FAX telephone number contains any spaces or commas, then it must be enclosed in double quotes.

Additional items of information can be specified. Note that when specifying a value for an item, the value must be enclosed in double quotes if it contains any spaces, commas, or characters you don't want converted to lower case. Furthermore, any double quotes appearing in the value must be changed to two consecutive double quotes. The names of the additional items and their meanings are:

1-address

2-address

3-address

4-address

5-address

The recipient's address can be displayed in one to five lines on the FAX cover page. These items are used to specify each individual line of the address. If no address lines are specified, then no address lines will be displayed on the FAX cover page. If intermediate address lines are omitted (*e.g.*, lines 1 and 3 specified, line 2 omitted), then blank address lines will be displayed in place of the omitted lines.

authorization

Your site might require you to specify an authorization or access code in order to send FAXes. You can specify any required authorization or access codes with this item.

fax-modem-number

The telephone number which the transmitting FAX modem should use when identifying itself to the receiving FAX device. While the receiving FAX device might print this number across the top or bottom of received pages, it is not placed on the FAX by PMDF-FAX (the sending FAX modem). To control the FAX number which is displayed on the cover page as your FAX telephone number, use the "my-fax-number" item.

my-fax-number

The FAX telephone number to display on the FAX cover page.

my-organization-name

The name of your organization, group, or department to display across the top of each transmitted FAX page.

my-telephone-number

The recipient's telephone number to be printed on the FAX cover page. If not specified, then no telephone number will be displayed.

Utilities

DB: Personal Alias Database Utility

For example, to specify a FAX address for John Doe at Example Company, Inc., the following command can be issued while in FAX mode:

```
db.fax> add john-fax fax-number "(714) 555-1212" domain
        "text-fax.example.com" recipient "John Doe" 1-address
        "Example" telephone "(714) 555-1212"
db.fax> show john-fax
Alias name: john-fax
Recipient's FAX number:      (714) 555-1212
Recipient's name:           John Doe
Address line 1:             Example
Recipient's telephone number: (714) 555-1212
Domain specification:       @text-fax.example.com
[1 entry shown]
db.fax>
```

Note that all of the values entered were enclosed in double quotes. This is often the safest policy as it avoids having to worry about spaces or other characters which can appear in the values to be specified and it prevents values entered from being converted to lower case.

recipients-name

The name of the recipient as it will appear on the cover page of the FAX message. Be sure to enclose the recipient's name in double quotes so as to not have it converted to lower case. If not specified, then no recipient's name will be displayed on the FAX cover page.

send-after

Do not send the FAX until after the specified date and time. The date and time must be given using the standard OpenVMS date-time specification format. For example, the date-time specification "3-FEB-2012 22:35:00" requests that the FAX not be transmitted until after 22:35 (10:35 PM) on February 3, 2012.

setup

A PostScript file to first process before processing your message. The filename must specify a full path to the file and the file must be world readable. Text library modules can also be specified using the format file-spec(module-name); *e.g.*,

```
setup D1:[INIT]PSLIB(LETTERHEAD)
```

where the text library is the file D1:[INIT]PSLIB.TLB and the module name is LETTERHEAD.

9.3.7.5.2 Modify (FAX Mode)

Syntax: modify *alias-name* *[[item value]...]*

With the modify command, various items associated with a FAX address can be altered or removed, and new items can be added to the FAX address. To alter or add an item simply specify the item name and new value. To delete an item, simply give the item name without any associated value. The domain-name and fax-number items, described below, cannot be deleted.

In addition to the items which can be specified with the add command, two additional items can be specified. These items are:

fax-number

The FAX number to send the FAX message to.

domain-name

The domain name associated with the FAX address.

Continuing with the example of the previous subsection, we can use the modify command to delete the use of the 1-address line and to change the recipient's telephone phone number:

```
db.fax> modify john-fax 1-address
[1 entry modified]
db.fax> modify john-fax telephone-number "(714) 555-1212"
[1 entry modified]
db.fax> show john-fax
Alias name: john-fax
Recipient's FAX number:      (714) 555-1212
Recipient's name:           John Doe
Recipient's telephone number: (714) 555-1212
Domain specification:       @text-fax.example.com
[1 entry shown]
db.fax>
```

9.3.7.6 Modify

Syntax: `modify alias-name new-alias-value`

The modify command is used to replace the expansion value of an alias with a new expansion value.

```
db> add postmaster "system@thor.example.com"
[Entry added to database]
db> show postmaster
Key          Value
-----
postmaster  system@thor.example.com
[1 entry shown]
db> modify postmaster "JOHN@example.COM"
db> show postmaster
Key          Value
-----
postmaster  JOHN@example.COM
[1 entry shown]
db>
```

Wild cards can be used when specifying the alias name in order to modify one or more aliases simultaneously.

Utilities

DB: Personal Alias Database Utility

9.3.7.7 Open

Syntax: open *database-name* [huge | long | short]

The `open` command opens an alias database after first closing any currently opened database. If the database to be opened already exists, then DB will automatically determine whether or not the database is a “huge” (stores 80/1024 character long alias names/values), or “long” (stores 80/132 character long alias names/values) or “short” (stores 32/80 character long alias names/values). If the database does not already exist, then it will be created. If the `short`, `long`, or `huge` keyword is specified after the database file name, then the database created will be of that type. If no keyword is specified, the created database will be a long database.

When DB is first invoked, the personal alias database pointed at by the logical `PMDF_PERSONAL_ALIAS_DATABASE` is automatically opened. If it doesn't exist, a long database is automatically created. Note that because of this, if you want a huge or short database instead of a long one, you must create a database file of the desired size either (e.g. for a huge database) using “`pmdf crdb/huge`”, or by using the DB “`open other-file huge`” command then renaming *other-file* to the `PMDF_PERSONAL_ALIAS_DATABASE` name.

9.3.7.8 Override

Syntax: override on | off

The `override` command is useful when looking at or modifying databases other than an alias database. Ordinarily the database manipulation commands, `add`, `copy`, `modify`, `rename`, `remove`, `set`, and `show` will only operate on aliases with the mail-address attribute. When the command “`override on`” has been issued, these commands can be used to manipulate any entry in the database regardless of its attributes (or lack thereof).

The “`override off`” command negates the “`override on`” command.

9.3.7.9 Quit-Program

Syntax: quit-program

The `exit-program` and `quit-program` commands are identical and each causes DB to close any open database and then exit. Note that in FAX mode there is no `exit-program` command, only an `exit-mode` command. To immediately exit DB from FAX mode, use the `quit-program` command.

9.3.7.10 Remove

Syntax: remove *alias-name*

With the remove command, one or more aliases can be removed from the database. Wild cards can be used when specifying aliases to be removed. For instance, to remove all aliases from a database, issue the command “remove *”.

9.3.7.11 Rename

Syntax: rename *old-alias-name new-alias-name*

The rename command is used to rename an alias without altering its expansion value:

```
db> add postmaster "system@thor.example.com"
[Entry added to database]
db> show postmaster
Key          Value
-----
postmaster   system@thor.example.com
[1 entry shown]
db> rename postmaster post
[1 entry renamed]
db> show post
Key          Value
-----
post         system@thor.example.com
[1 entry shown]
db>
```

9.3.7.12 Set

Syntax: set *alias-name attributes[,...]*

The set command can be used to grant or remove attributes from aliases. The alias name specification can include wild cards. The allowable attribute names are listed in the add command description described in Section 9.3.7.1.

9.3.7.13 Show

Syntax: show [*alias-name* [attributes]]

Utilities

DB: Personal Alias Database Utility

The show command is used to list the contents of a database. The optional attributes keyword, when supplied, causes the attributes associated with each alias to also be displayed:

```
db> add postmaster "system@thor.example.com"
[Entry added to database]
db> show postmaster attributes
Key          Value
-----
postmaster   system@thor.example.com
Attributes:  private,expand,block-receipts,mail-address
[1 entries shown]
db>
```

The alias name specification can contain wild cards. To see all entries with the mail-address attribute, issue the command “show”; to see absolutely all entries, first issue the command “override on” followed by the command “show”

9.3.7.14 Wildcards

Syntax: wildcards ignore | interpret

By default, the characters * and % in alias names are interpreted as wildcards: an asterisk, *, will match zero or more characters while each percent sign, %, will match precisely one character. The command “wildcards ignore” will cause DB to not interpret asterisks or percent signs as wildcards; the command “wildcards interpret” will resume interpretation of wildcards.

9.3.7.15 Write

Syntax: write *file-name* [alias]

The write command is used to create a command file which, when fed back into DB with the < or << commands, will recreate the entire database. If the alias keyword is specified, then a PMDF alias file (using PMDF’s alias file format) will instead be produced.

For instance, the following commands will create a database named DB2.DAT which duplicates the database DB1.DAT:

```
db> open db1.dat
db> write make.com
db> open db2.dat
[creating database]
db> <<make.com
db>
```

The above example presupposes the existence of a database named DB1.DAT. The file MAKE.COM created with the write command is an ordinary text file which can be edited with any text editor.

Note that this is not an efficient way to duplicate a database — the DCL COPY command works much faster. The write command is intended as a means of creating a textual representation of a database which can be edited as a text file and later turned back into a database.

10 Notes for POP and IMAP Clients

This chapter provides a few tips for POP and IMAP client users; that is, users who use POP or IMAP clients remotely to access a mailbox on the PMDF server system. The remote system can be a PC, Macintosh, UNIX, OpenVMS, or other sort of computer system—as long as the remote system has a POP or IMAP client on it and TCP/IP access to a PMDF system running a POP or IMAP server, respectively, the user can access their messages on the PMDF server.

10.1 The PMDF PASSWORD Utility: Enabling Authentication (Login) Mechanisms

The PMDF PASSWORD utility is used to add and change password entries in the PMDF password database that can be used for special authorization purposes, such as authentication by POP and IMAP clients.

Whether you need to use this utility will depend on your site's configuration, (and on what POP or IMAP client you use and what underlying commands it uses). If you access the VMS MAIL message store from POP or IMAP clients, then you might need to. Otherwise (for instance, if you access the PMDF popstore from a POP client or the PMDF MessageStore from an IMAP or POP client) then you probably will not.

APOP passwords, used by some POP clients such as Eudora, and CRAM-MD5 passwords, used by IMAP clients, cannot be stored in the system password file. Therefore, in order to support use of the POP protocol's APOP command or AUTH command with CRAM-MD5, or the IMAP protocol's authenticate command with CRAM-MD5, you must have a password entry stored in another authentication source such as the PMDF password database.

When using the PMDF password database as the source of authentication information, note that it can contain several entries, one for each allowed service value. The sort of connection (for instance, whether POP or IMAP) will control which service entry is preferentially checked. Queries by the POP server will first check your POP service entry, but if such an entry does not exist will fall through to the your DEFAULT service entry. Queries by the IMAP server will first check your IMAP service entry, but if such an entry does not exist will fall through to your DEFAULT service entry.

The use of service specific password database entries is not typical; typically, you would simply have one entry, your DEFAULT service entry, used whenever the PMDF password database is queried. But if you do want to use service specific password database entries, while the above description of service specific probes can sound complicated, the goal is simply to query the “natural” password entry for each case.

Notes for POP and IMAP Clients

The PMDF PASSWORD Utility: Enabling Authentication (Login) Mechanisms

To set your password (for the DEFAULT service) in the PMDF password database, issue the command:

```
$ PMDF PASSWORD
```

You will then be prompted to enter your password. For further details, see the discussion of the PMDF PASSWORD utility in Chapter 9.

10.2 Notes on IMAP Access to the VMS MAIL Mailbox

This section discusses tips for IMAP client users accessing the VMS MAIL mailbox.

10.2.1 Folders

Selecting your mail file and folders

By default, the IMAP server serves out your default VMS MAIL mail file. Your IMAP client likely provides an option for selecting what mail file (and possibly folders) you really want to access. The name of such a client option can be something like “folder prefix” or the like.

The format that the PMDF IMAP server expects is

```
#mail-file#folder-pattern
```

where either or both of *mail-file* or *folder-pattern* can be omitted. If no *mail-file* is specified, your default VMS MAIL mail file will be served out; if no *folder-pattern* is specified, then all folders in the selected mail file will be served out. You would specify a *folder-pattern* if you wanted to access only certain folders in your mail file; however, note that some IMAP clients will not properly handle specifications of particular folders.

For instance, a user wanting to access all the folders in a non-default mail file might specify:

```
#DKA1 : [JOHN.MAIL] OLDMAIL.MAI#
```

Subscribed folders

IMAP allows you to mark certain folders as being “subscribed”; your client can then either only show you your subscribed folders, or allow you to select whether to see all your folders, or only your subscribed folders. The format to use when subscribing folders is the same as that shown above for selecting a mail file and folders; as above, note that some clients might not properly handle the case where you attempt to subscribe only folders of a certain name or pattern.

Notes for POP and IMAP Clients

Notes on IMAP Access to the VMS MAIL Mailbox

The list of “subscribed” folders is stored as the file `PMDF_IMAP.MAILBOX`¹ in your default mail directory, as specified by your VMS MAIL profile.

The INBOX and NEWMAIL folders

The folder name `INBOX` is treated as a synonym for the `NEWMAIL` folder in your default mail file.

Moving messages between folders

Note that unlike VMS MAIL behavior, the standard IMAP behavior is that messages moved are inserted at the end of the folder when moved.

Reading and deleting messages and folders

Messages marked for deletion are not actually moved or deleted until the client software sends an `EXPUNGE` command; the messages marked for deletion are then moved to the `WASTEBASKET` folder. Whether or not messages in the `WASTEBASKET` folder are actually deleted depends upon the setting of the VMS MAIL `AUTO_PURGE` option.

When a folder is deleted, its contents are moved to the `WASTEBASKET` folder; whether or not the messages are then deleted upon session termination depends upon your setting of the `AUTO_PURGE` option in VMS MAIL.

Hierarchical folders

Although VMS MAIL itself does not support hierarchical folders, the IMAP server effectively provides hierarchical folders to IMAP clients accessing a VMS MAIL mailbox.

The forward slash character, `/`, is used as the hierarchy separator.

A folder name can be any valid VMS mail folder name; note that such names are case sensitive and have a maximum length of thirty nine characters.

Each non-top-level folder in a mail file is implemented as its own separate subdirectory directly under the corresponding mail file directory. So note that the hierarchy of the folders is not reflected in a directory hierarchy; the subdirectory names themselves are random, unique names, and all the subdirectories are directly below the mail file directory. Instead, in the mail file directory itself is stored an auxiliary file `PMDF_IMAP.MBXDIR` which contains a mapping between the hierarchical folder names, and the corresponding subdirectories directly below the mail file directory. **Do not delete the `PMDF_IMAP.MBXDIR` file.** Each folder has its own subdirectory; in that subdirectory is a mail file always named `MAIL.MAI` containing the message files

¹ The format of this file is very similar to the `.newsrc` file on UNIX systems. The only difference is that the last character of an active mailbox is `=` instead of `:`. This is because `:` could be a valid character in the mailbox when a complete file name is specified.

Notes for POP and IMAP Clients

Notes on IMAP Access to the VMS MAIL Mailbox

for the folder, and an auxiliary file `HIERARCHY.NAME` which is a single record file containing merely the name of the folder to which the subdirectory corresponds.

It is not necessary to create “intermediate” folders before creating a terminal folder; for instance, folder `apple/banana` can be created before folder `apple` has been created.

A folder can only be deleted if it has no subfolders.

10.2.2 UID Support for the VMS MAIL Message Store

In order to support IMAP’s message unique identifiers (UIDs), for which the VMS MAIL message store itself has no satisfactory equivalent, the PMDF IMAP server uses auxiliary files, one such auxiliary file per IMAP hierarchical folder or actual VMS MAIL mail file. The auxiliary file for a VMS MAIL mail file will be named `mailfilename-UIDDIR` where `mailfilename` is the name of the underlying mail file. The auxiliary file for an IMAP hierarchical folder will always be named `MAIL.MAI-UIDDIR` and stored in the same directory as the hierarchical folder itself.

10.3 Subaddresses/Folders in MessageStore addresses

You can include extra information in your mail address. This extra information is referred to as “subaddress”. Any material following a plus, `+`, in your address is considered to be a subaddress. For instance, “test” in the address `bob+test@example.com` is a subaddress.

A subaddress in a PMDF MessageStore address is considered to describe the folder to which the message should be delivered. For instance, for the PMDF MessageStore user `bob@example.com`, a message addressed to `bob+test@example.com` would be delivered to bob’s folder named “test”.

10.4 POP Notes

This section describes some tips for POP users. Note that what might seem “limitations” are usually inherent features of the POP protocol; *i.e.*, PMDF is limited by the fact that you are using a POP client. IMAP is a richer protocol so IMAP clients can have more capabilities; if you find yourself wanting to do things with your e-mail that you cannot seem to achieve with a POP client, you might want to investigate whether there are any IMAP clients that would suit you better.

10.4.1 Folders

POP3 does not allow the client to specify a mail file or a folder. So if you are accessing your VMS MAIL mailbox from a POP client, note that the only folder opened is the `NEWMAIL` folder in your VMS MAIL mail file. If you are accessing your PMDF MessageStore mailbox from a POP client, the only folder opened is the `INBOX` folder.

10.4.2 Reading and Deleting Messages in the VMS MAIL Mailbox

With the VMS MAIL mailbox, after a message is read (retrieved) by a POP client, it is marked as read and normally will be moved to the `MAIL` folder when the session terminates. (Your system administrators might have chosen to configure the PMDF POP server to have a different behavior.)

If a VMS MAIL message is deleted by the POP client, the message is marked for delete and moved to the `WASTEBASKET` folder when the connection is closed or the client exits. If you have enabled `AUTO_PURGE` in your VMS MAIL profile, then all messages in the `WASTEBASKET` folder will be purged when the connection is closed or the client exits. If you have not enabled `AUTO_PURGE`, then the deleted messages stay in the `WASTEBASKET` folder. There is no way in POP3 to set `AUTO_PURGE`; it has to be done in VMS MAIL or PMDF MAIL.

10.4.3 Eudora's Password Changing Command

PMDF supports the Eudora POP client's ad-hoc method for password changing. Check with your system administrators if you have trouble using the Eudora password changing command; it might be that your system administrators have not started the PMDF `POPPASSD` server to enable this feature.

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