Mail*Link SMTP for QuickMail

Administrator Guide

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Contents

Welcome to Mail*Link SMTP

Welcome to Mail*Link SMTP for QuickMail! This software links QuickMail users on an AppleTalk network to the world-wide TCP/IP Internet.

This guide is for the network administrator who will install and configure Mail*Link SMTP for QuickMail. It assumes that the QuickMail software is up and running.

To use this guide, you should be familiar with the basics of Macintosh System 7. If you have not used a Macintosh before, we suggest that you read the *Macintosh User's Guide* provided with the computer.

How to use this guide

This guide shows you how to install an E-mail gateway between Quarterdeck Mail and an SMTP mail system.

- CHAPTER 1 describes system requirements and the installation procedure.
- CHAPTER 2 shows how to complete the required configuration and send a test message through the gateway.
- CHAPTER 3 shows how to set configuration preferences that affect general gateway operations.
- CHAPTER 4 describes message and enclosure processing options.
- CHAPTER 5 describes administration tasks such as working with authorization numbers, registered users, and queued messages. It includes a section on mail forwarding, which enables you to forward mail from one QuickMail login to another QuickMail or Internet address.

- CHAPTER 6 explains problem reporting mechanisms in the software and covers some basic error conditions, providing troubleshooting suggestions.

At the back of this guide is an appendix that contains the ISO 8859-1 character translation tables, an explanation of the Mail Overflow application, and a glossary for terms introduced throughout the guide.

Standards and conventions used in this guide

Italic type indicates emphasis; it is also used for the names of manuals or other documents.

When a word appears in monospace font, you should type that word exactly as it appears. If this font is followed by a word in *italics*, the italicized word is a parameter that you must substitute with a real value.

Text that is set off like this deserves special consideration.

Text that is set off like this is information that you must know to avoid time-consuming errors.

Additional reading

The following documentation is provided as online Tech Notes in Adobe® Acrobat® PDF format:

- *MacTCP Guide*

  This document describes how to configure the MacTCP software from Apple Computer, Inc.

- *Open Transport 1.1 manual*

  This document describes how to configure the Open Transport software from Apple Computer, Inc.

- *ML Test Guide*

  This document explains how to use the ML Test application to verify a TCP/IP or SMTP connection. ML Test is provided with the gateway software.

- *Single Utility Guide*

  This document describes how to use the Single Utility on a Unix system to decode AppleSingle-encoded file attachments.

The following publications are recommended for background information on SMTP and QuickMail:

- *QuickMail Administrator's Guide*

  This guide from CE Software, Inc. describes how to install QuickMail servers, and how to add or modify users and groups on the server. Although the guide you are currently reading provides specific information about using the QM Administrator software from CE Software, Inc. to configure and manage the gateway, the information provided in the QuickMail Administrator's Manual provides useful background information and it might be necessary for you to consult it during installation.

- Requests for Comments (RFCs)

  These documents provide background technical information on SMTP, mail formats and routing, and the Internet domain name system:

  RFC 821: Simple Mail Transfer Protocol

  RFC 822: Mail Format

  RFC 974: Mail Routing and the Domain System.

  RFC 987: Mapping Between X.400 and RFC 822.

  RFC 1034: Domain Names —Concepts and Facilities

  RFC 1035: Domain Names—Implementation and Specification

  RFC 1521: MIME (Multipurpose Internet Mail Extensions) Part One: Mechanisms for Specifying and Describing the Format of Internet Message Bodies (Updated by RFC1590)

You can access the RFCs from these pages:

`http://www.starnine.com/development/internetstd.html`

`http://www.isi.edu/rfc-editor`

For the most up-to-date details on obtaining RFCs via FTP or e-mail, send an e-mail message to" rfc-info@ISI.EDU" with this message body:

```
help: ways_to_get_rfcs
```

Requests for special distribution should be addressed to either the author of the RFC in question, or to NIC@NIC.DDN.MIL. Unless specifically noted otherwise on the RFC itself, all RFCs are for unlimited distribution.

1

Getting Started

This chapter describes system requirements and shows you how to install the product.

About Mail*Link SMTP

Mail*Link SMTP/QM software runs on the same Macintosh system as the QM Administrator, QM Server, and the NameServer. The SMTP gateway has two pieces:

- A QuickMail gateway MailCenter

  This piece of the gateway is created and executed by the QM Administrator. It is responsible for the interaction between the QuickMail system and the smtp.daemon.

- The smtp.daemon application

  This application is responsible for providing the “threads” environment, processing outgoing and incoming messages, and conducting the SMTP send/receive transactions with the target.

Both the QM Administrator and the smtp.daemon must be running on the same Macintosh system for mail exchange to occur.

Contents of the Mail*Link SMTP/QM folder

During the install procedure, a folder named Mail*Link SMTP/QM is created at the top level of the hard disk.

*Although the Mail*Link SMTP product will work from other disks connected to the Macintosh, we recommend that you leave it at the top level of the startup disk. Future upgrades will rely on finding the Mail*Link SMTP/QM folder in that location.*

The Mail*Link SMTP/QM folder contains the smtp.daemon application, which must be running for the gateway to work, and the ML Test application, which can be used to verify TCP/IP and SMTP communication between the Macintosh and other hosts on the network.

The smtp.daemon application is the gateway. It provides the threads environment, processes outgoing and incoming messages, and conducts the SMTP send/receive transactions with the target host. It must reside within the Mail*Link SMTP/QM folder. Many sites create an alias for this application in the Startup Items folder or on the Desktop; see "Creating a startup alias for the smtp.daemon" on page 8 for details.

The Mail*Link SMTP/QM folder also contains two folders. The Message Spool/SMTP folder is the spool folder in which the smtp.daemon queues mail files. The ADMIN folder contains resource files, the destination database, the log file, files related to the registered users database, and the Mail Overflow and MIME partial decoder applications.

QA folder

A file named "Mail*Link® SMTP" is installed in the QA folder within the System folder of the target install disk. The Mail*Link® SMTP file is required to create the gateway MailCenter.

MacTCP or Open Transport

The gateway works with MacTCP or Open Transport. If the Macintosh is running System 7.5.3 or later, Open Transport is already installed as part of the system. If the Macintosh is running an earlier system version, or if you have removed Open Transport from the system, you can install it from the Macintosh System diskettes or by downloading it from Apple's

FTP server. If the Installer does not find Open Transport or MacTCP, or if it finds an out-dated version of MacTCP, it installs the version of MacTCP distributed with this product.

Thread Manager

If the Macintosh on which Mail*Link SMTP is installed is running 7.5.1 or later (as recommended), the Thread Manager is already part of the system. If it is running an earlier version of System 7, the Installer places a Thread Manager extension in the Extensions folder as part of the Mail*Link SMTP installation.

Utilities

Mail*Link SMTP ships with mailer-specific Macintosh utilities and applications. For Unix users, Mail*Link SMTP also includes C-language source code for the Single utility and its manual page.

We recommend that enclosures sent to Unix systems be encoded in MIME format, in which case the Single utility is not required. Users can compile the source on their Unix systems if they are receiving Macintosh files in AppleSingle, AppleDouble, or PACKIT format.

Scripts are also provided for processing Macintosh file attachments on a Unix system and converting the Unix hosts file to a format compatible with MacTCP or Open Transport.

Installing Mail*Link SMTP

The Macintosh that will run the Mail*Link SMTP gateway must be physically connected to a TCP/IP network and to your AppleTalk network. You should choose a Macintosh that has sufficient processor speed, as gateway performance will be affected by mail load, the number of users accessing the gateway, the speed of the Macintosh, and the speed of the network. Before you install the software, check the following system requirements:

- System 7.0 (System 7.5.1 or later recommended)

We strongly recommend that you use a System 7.5.1 or later.

- Memory

  The Macintosh requires a minimum of 12 Mbytes of physical RAM (not virtual memory) if using MacTCP, or 16 Mbytes if using Open Transport. We recommend more memory than this. The optimum amount of memory depends on whether other applications and extensions are running on the Mac system.

If you are upgrading from a previous version of the gateway, the 4.0 release uses the previous application memory size. You should increase the setting by 500K after installing the 4.0 upgrade.

  For 68K systems, we do not recommend the use of virtual memory or other RAM-extending software. For PPC systems, we recommend that if you use virtual memory, you set it to 1 Mbyte more than the actual amount of physical memory so that demand paging works properly.

- QuickTime

  If QuickTime is not installed, automatic conversion of PICT enclosures to GIF format (and vice versa) by the MIME encoder/decoders does not occur and an error message appears in the log file.

- Finder scripting extension

  On PPC systems, the Finder Scripting extension is required to launch Mail Overflow automatically.

- QuickMail software

  QM Administrator, QM Server, and the NameServer must be running on the same Macintosh as the smtp.daemon.

Easy Install

Follow these steps to install the Mail*Link SMTP software:

1. Launch the Installer from the Install disk.
2. Click OK in the display screen to open the Easy Install dialog.

   Although you can switch disks to install on another volume in this window, and the smtp.daemon will work from another volume, we recommend that you leave it at the top level of the startup disk. Future upgrades will rely on finding the Mail*Link SMTP/QM folder in that location.
3. Click Install, or see “Custom installation,” next.

Custom installation

To customize which components are installed,

1. Click Customize in the Easy Install window.
2. Select from among the following components, and then click Install.

   Only the items you select will be installed. These are the items you can choose from:

- Mail*Link SMTP/QM

  This package contains the applications and related files required to run the gateway.

- New Mail*Link Prefs

  Select this to install a new Mail*Link Prefs file, which is required to run Mail*Link SMTP. However, if you are updating an existing gateway, installing this file clears your existing preferences settings.

  You cannot overwrite an existing Prefs file by installing this item. If you want to install a new Prefs file to correct a corrupted one, first remove the old Prefs file and then install.

- New Destination Database

  Select this to install a new Destination Database, which is required to run Mail*Link SMTP. Installing this file clears your existing destination entries.

You cannot overwrite an existing destination database file by installing this item unless you explicitly select it as part of a software upgrade.

- MacTCP Package

  This package contains the drivers and related files required for TCP/IP to function on a System 7 Macintosh. If the current version of MacTCP is already present in the Control Panels folder or Open Transport is installed, this package is not installed.

- Threads Package

  This package contains the Thread Manager, which is already built into System 7.5. If the Thread Manager is already present in the System, this package is not installed. If the System is earlier than 7.5 and the Thread Manager extension is not present, it is installed in the Extensions folder.

Authorization numbers and “soft-keys”

This version of the Mail*Link SMTP gateway uses a “soft-key” technology— an authorization number you enter into the smtp.daemon. Authorization numbers are used both to enable the 4.x gateway to function and to add more authorized users to the product. A valid authorization key also allows the smtp.daemon to recognize the licensed user counts contained in the older “hard-key file” technology..

Don’t throw away your old key files! They are still recognized by the smtp.daemon when a valid authorization number has been entered. To add new users to the gateway, only a new soft-key is required.

The first time you launch the smtp.daemon, a dialog is displayed requesting an authorization number. Type the number and press Return. You can open the authorization dialog at any time by selecting Authorization in the smtp.daemon Windows menu.

You can obtain a demo authorization number by mailing to this address:

```
keys@starnine.com
```

The subject line of your message must contain this string:

```
quickmail smtp
```

Setting the GMT offset

Because the Internet is international and mail can often be exchanged between various time zones, we recommend that you specify your location in the Map Control Panel, which is installed by default on all System 7 Macintosh systems. After you set your location, the date field generated by Mail*Link SMTP in outgoing mail will contain the Greenwich Mean Time (GMT) offset. To set your location, open the Map Control Panel.

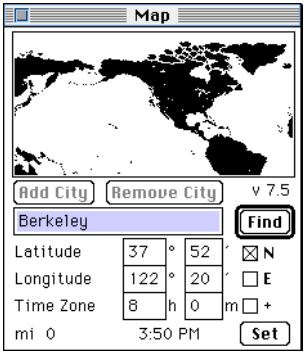

Figure 1 Map control panel

Type your city's name, or the name of a large city in the same time zone as your location, and click the Find button. A blinking light will indicate the location on the map. If the city you specify is not found, you can specify the city's name, latitude, longitude, and time zone offsets, and then click the Add City button. When the right location is blinking on the map, click the Set button.

To the smtp.daemon, the important item in the Map Control Panel is the time zone offset from GMT. This item indicates the difference in hours/minutes between your local time and GMT. The + check box on the right side of the time zone line should be checked if you are in a location to the East of Greenwich and West of the International date line.

Setting the date and time

The Map Control Panel does not vary for daylight savings time. If daylight savings time is used in your time zone, you can set it in the Date and Time Control Panel.

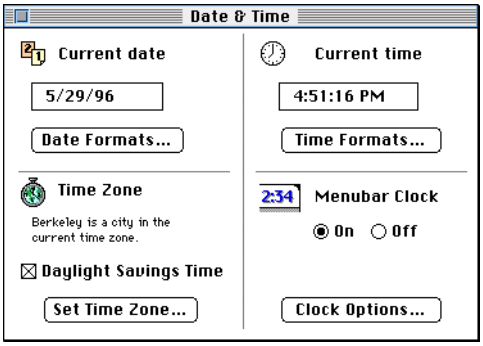

Figure 2 Date and time control panel

Creating a startup alias for the smtp.daemon

The smtp.daemon runs as an application on the Macintosh desktop. It must be running for mail exchange to take place, but as with most Macintosh applications, you can run other applications concurrently and hide the application from view.

To make sure that the smtp.daemon will be launched automatically whenever the Macintosh is restarted, create an alias for the smtp.daemon application and drag it to in the Startup Items folder within the System Folder.

Balloon help

Mail*Link SMTP has Balloon help. To turn it on, choose Show Balloons from the Balloon Help menu in the upper-right of the menu bar, or press the Help key on your extended keyboard.Then, move the mouse cursor over an item to see a brief explanation of that item. When you no longer need help, you can turn it off by choosing Hide Balloons in the Balloon Help menu or by pressing the Help key on your extended keyboard.

2

Required Configuration

This chapter describes how to complete these tasks:

- check TCP/IP communication between the Mac and another host
- configure the Easy Setup dialog (if you have not already done so)
- configure QuickMail for gateway access
- send a test message to verify that the gateway is working

If you don't configure enclosure-handling methods in the gateway, all outbound attachments will be processed via Binhex. See Chapter 4.

Required TCP/IP configuration

This section shows how to verify that the Macintosh can communicate with one or more hosts on the local TCP/IP network. It does not describe the details of configuring Open Transport or MacTCP to enable the Macintosh to communicate on the local IP network. For those details, please see one of the following online guides:

- *Open Transport 1.1 manual*
- *MacTCP Guide*

Keep in mind that the Macintosh should always have the same IP address. It's important not to rely on dynamic assignment for the Macintosh IP address.

Checking the Mac's TCP/IP configuration

In this section, we show you how to verify the Macintosh TCP/IP settings for both Open Transport an MacTCP. Please note that only one of these protocol stacks can be active on your system at a given time.

To verify the TCP/IP configuration in Open Transport, select TCP/IP in the Control Panels menu (Figure 3).

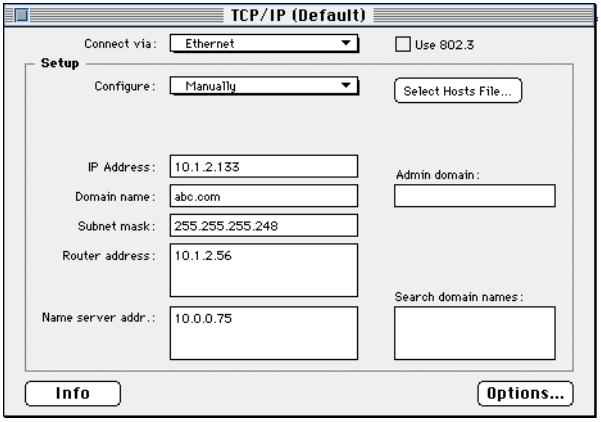

Figure 3 Checking the Open Transport configuration

The Macintosh IP address must be assigned statically, so it is always the same address. See the online *Open Transport 1.1 manual* for details.

Or, if the Mac is running MacTCP, select MacTCP in the Control Panels menu. Figure 4 shows an example TCP/IP configuration in MacTCP:

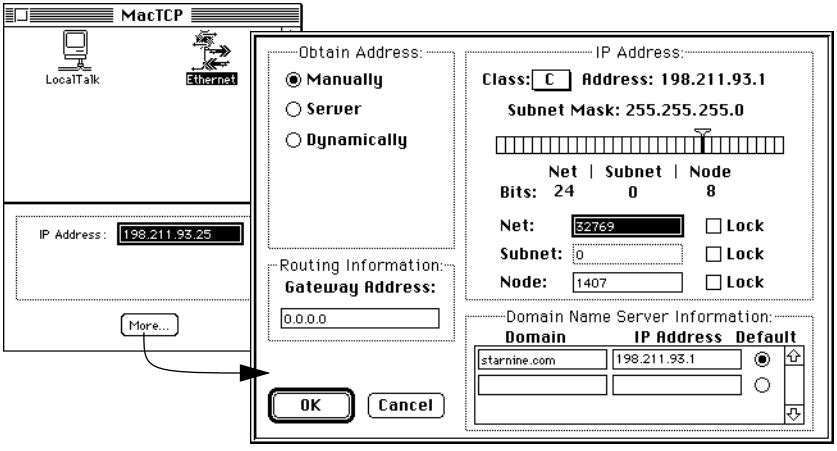

Figure 4 Checking the MacTCP Control Panel configuration

See the online *MacTCP Guide* for more details.

If TCP/IP has not been configured on the Macintosh, you must supply the required IP information in order to use the gateway. Ask the IP network administrator for your valid IP configuration. Do not attempt to configure a TCP/IP connection using guesswork!

Identifying the Mac to the default mail host

The default mail host is a system on the local network that is responsible for forwarding mail out to the Internet or to other SMTP hosts. If there no designated mail host on the network, the default mail host can be any IP host that has the capability of forwarding mail.

By default, the smtp.daemon forwards all mail to the default mail host. You can change that default so the smtp.daemon first attempts to translate the hostname portion of an E-mail address to an IP address by using the name-resolver methods specified in the TCP/IP panel of the Preferences dialog. If an error is returned by the name resolver, the host is labeled as "unknown" and the mail will then be forwarded to the default mail host.

The hosts file (such as /etc/hosts) on the default mail host should contain a record specifying the gateway hostname and Macintosh IP address. See " Easy Setup dialog" on page 14. This recommendation becomes a requirement if a domain name server is not supported on the network.

Understanding name resolution issues

MacTCP can obtain the IP address associated with a hostname from either of these locations:

- a Hosts file

  Hosts files are used by TCP/IP software as a reliable but high-maintenance form of address resolution. Although they duplicate the function of a domain name server, Hosts files are often maintained even when domain name servers are present, to provide redundancy or to customize certain host connections.

- DNS

  The name of the local domain (such as “abc.com”) and the IP address of a Domain Name System (DNS) server on the local network can be specified in the TCP/IP configuration window.

When to use the Hosts file

If you are planning to send all mail to the default mail host (the default configuration), it is more efficient to have one record in the Hosts file for the default host and to *not* have any DNS configuration in MacTCP or Open Transport. This is also a reasonable choice if you have only a few hosts on the network, in which case you can include entries for each host in the Hosts file. See the online *Open Transport 1.1 manual* or *MacTCP Guide*.

If you do not supply the DNS configuration in the TCP/IP software, the Hosts file must contain a record specifying the host name and IP address of every machine the smtp.daemon will connect to. (It must have at least one record for the default mail host.

Even if you do supply the DNS configuration in the TCP/IP software, we recommend that you add at least one record to the Hosts file to provide a redundant method of obtaining the IP address of the default mail host in case the domain name server is inaccessible.

When to use DNS

DNS services come in handy when the gateway will potentially communicate directly with hundreds of hosts. This can occur only when the gateway is *not* configured to send all mail to the default host, and when the local network is quite large.

DNS is also required if the domain name server supports MX records and you want MX records to be the used for address resolution. See “Choosing how name resolution occurs” on page 41 for related issues.

Testing the TCP/IP setup

You can test communication between the Macintosh and the default mail host by using the ML Test application to send a sample SMTP message to the mail host Follow these steps:

1. Open the Mail*Link SMTP/QM folder and launch ML Test.
2. Choose Send from the Test menu (Command-s).

   The window shown in Figure 5 opens.

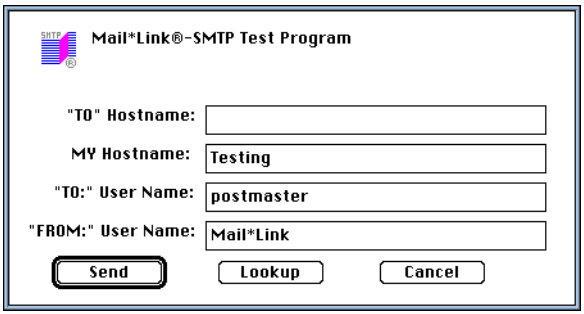

Figure 5 Sending a test message

3. Enter the hostname of the default mail host in the first text field.
4. Leave the default values in the other three fields, and click Send.

   ML Test initiates a connection with the host and sends a test message. It records its actions in the status window, and then reports whether the test succeeded or failed.

   See the online *ML Test Guide* if the test does not work successfully.

   If ML Test reports success, log into the default mail host as the specified user (such as “postmaster”) and verify that the mail message was actually received. As a final step in the network verification process, you should “ping” the Macintosh from the default mail host. To do this, follow these steps:

5. Leave ML Test running on the Macintosh.

6 At the console of the default mail host, type:

`ping` *ip-address*

The *ip-address* parameter is the address assigned to the Macintosh.

Easy smtp.daemon setup

When you launch the smtp.daemon for the first time after the initial installation, you'll see this dialog box:

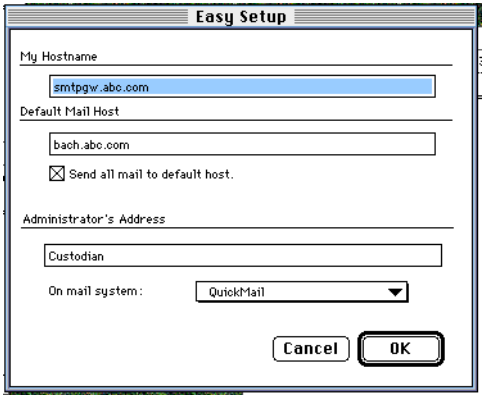

Figure 6 Easy Setup dialog

TIP *You can open this window at any time by choosing Easy Setup in the Windows menu.*

1 Assign a hostname to the gateway.

The hostname should include your local domain name. When users send mail from the Internet, they will use this name to address local QuickMail users. For example:

`smtpgw.abc.com`

Keep the hostname simple, do not use characters that require translation (such as spaces), and try to choose a name that users will recognize as a gateway. Remember that Internet addresses can

have many components, including domain names and complex paths to specific systems.

2 Type the name of an SMTP mail host on your local network.

The default mail host is usually a host responsible for forwarding mail to and from the Internet. It must be able to communicate with the Mac running the gateway via TCP/IP. If you are using a local Hosts file for name resolution, you must enter the name of a host specified in that file. For example:

```
mailsys.abc.com
```

See “Identifying the Mac to the default mail host” on page 11 for details.

3 Check the option labeled “Send all mail to default host.”

Most sites use this option, because it’s more efficient for mail-handling on the Macintosh. If it’s not checked, the gateway attempts to forward mail directly to local hosts instead of passing that job on to the default mail host.

4 Type the QuickMail address of the user who should get administrative messages from the gateway.

Specify the address in this format:

First Last@Mailcenter

For example,

```
Joe Smith@MailCenter1
```

Typically, we recommend that you use a local QuickMail address as the administrator address, because Internet addresses will not receive messages related to error conditions (because the gateway may be unable to forward them).

5 Select the type of address you just entered (QuickMail or Internet).

6 Click OK.

Required QuickMail configuration

This section shows how to create the gateway MailCenter and configure how frequently mail will be exchanged between QuickMail and the smtp.daemon. If you are not familiar with the QM Administrator or you want more background information about how it manages MailCenters, see the QuickMail Administrator's Manual (CE Software, Inc.).

Creating the gateway MailCenter

To create a MailCenter in the QM Administrator, follow these steps:

1. If the QM Administrator is not already running, launch it.
2. Select New MailCenter in the File menu to open this dialog:

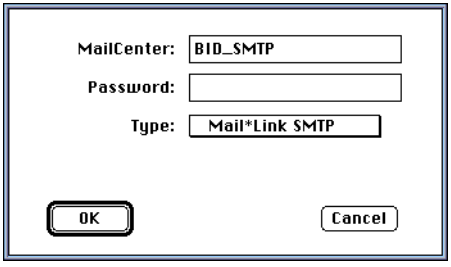

Figure 7 Creating a MailCenter

3. Type a name for the MailCenter in the MailCenter field. For example,

   `BID_SMTP`

The name "BID_SMTP" is just an example. You can use any valid MailCenter name, but we recommend that you assign a name that users can recognize as a gateway. When QuickMail users send mail through the gateway, they must select this MailCenter by name.

4. If you want to password-protect the gateway MailCenter, type in a password and then press Tab; otherwise, just press Tab.

5 Choose Mail*Link SMTP in the Type pop-up menu and then click OK.

If Mail*Link SMTP is not an option in the Type menu, the Mail*Link® SMTP file is not present in the QA folder. See Chapter 2 for details.

Selecting a custodian for the gateway MailCenter

When you click OK, in the previous dialog, this dialog opens:

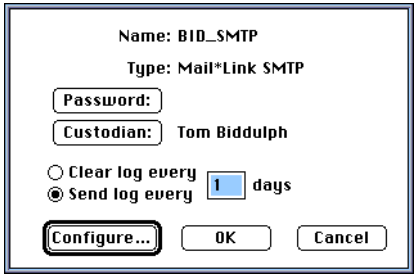

Figure 8 Configuring the MailCenter

1 Click Custodian to open a list of users.

If necessary, click the MailCenter button to view the user list for a different MailCenter.

2 Select a QuickMail user, such as Local Administrator to act as custodian for the gateway MailCenter, and then click OK.

The QM Administrator closes the user list window and returns to the dialog shown in Figure 8.

Configuring connect times

The latency in extracting mail from and delivering mail to QuickMail is controlled entirely by the parameters you set in the QM Administrator. There are two levels of control:

- When the QM Administrator contacts the MailCenters it administers
- When mail is transferred to and from smtp.daemon

The second level is dependent on the first—no matter how frequently you specify gateway connect times, no connection will occur until the QM Administrator is “ready” to contact its MailCenters.

1 Click Configure in the dialog shown in Figure 8 on page 17.

This opens the “second-level” dialog for configuring when the QuickMail system connects to the Mail*Link SMTP gateway.

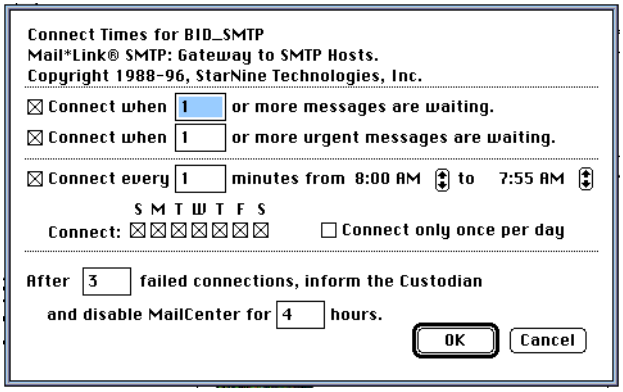

Figure 9 Gateway connect times

We recommend that you use the settings shown in Figure 9.

2 For the “Connect every ... minutes” option, leave the default value “1” in the edit field.

The 1-minute connect time is recommended if the QM Administrator is not servicing other gateway MailCenters. If it is servicing other gateway MailCenters or listening for a modem connection, you may want to specify a higher number in the edit field. However, specifying a number higher than 1 will affect mail latency in the gateway. If a large amount of mail is exchanged through the gateway, specifying a connect interval such as 15 minutes could overload disk usage for individual online MailCenters.

3 Use the arrows to set a daily "start time" and "end time" for the QM Administrator to connect to the gateway.

You can instruct the QM Administrator *not* to connect to the gateway on certain days of the week by deselecting the check box below that day; for example, if you do not wish to allow Mail*Link SMTPto initiate connections, on weekends, deselect the check box for Saturday and Sunday.

4 Click OK.

5 Select Configure QM Administrator from the File menu.

If necessary, close the gateway MailCenter and then select Configure QM Administrator. This opens the "first level" dialog for configuring when the QM Administrator connects to its mail centers:

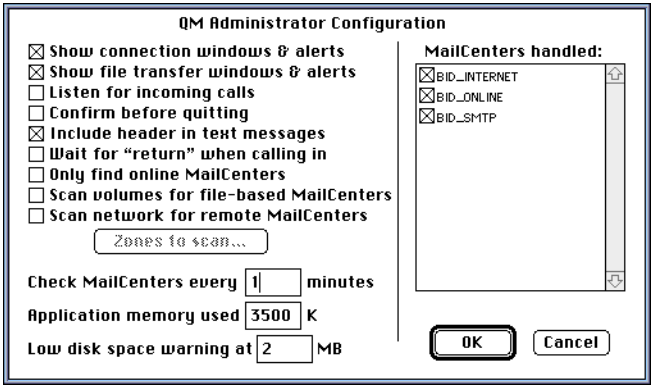

Figure 10 Configuring QM Administrator parameters

Configuring the QM Administrator to check its MailCenters every minute minimizes latency on incoming mail.

6 Type 1 in the first text field at the bottom of the window ("Check MailCenters every…").

When the QM Administrator checks the gateway MailCenter and it is time for it to connect, the QM Administrator writes outbound mail to the spool folder and uploads inbound mail to QuickMail.

Sending a test message

The easiest way to verify communication between QuickMail and SMTP is by sending a "loop back" message to yourself through the gateway. Follow these steps:

1. Log in to QuickMail and create a mail message.
2. Click the Address area, and then click the Special button in the addressing window.

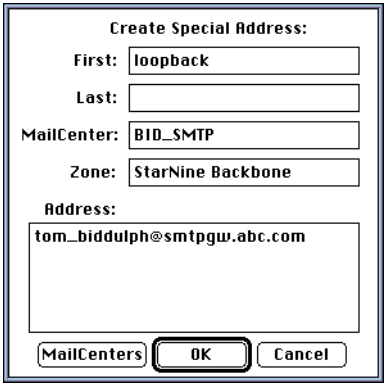

Figure 11 Addressing mail through the gateway

3. Click the MailCenters button and select the gateway MailCenter in the dialog that opens. Then, click OK.

   When you click OK, you are returned to the Special Address dialog. The MailCenter and Zone fields will be filled in with the names you selected.

4. Type a descriptive name, such as "loop back" in the First name field of the Special Address dialog.
5. Type the Internet-style address in the Address field, as shown in Figure 11.

For example, type

```
tom_biddulph@smtpgw.abc.com
```

Any character that is not legal in an Internet address must be replaced with an underscore (_) or period (.), depending on how you configure the gateway.

When the gateway finds an address in the Address field, it uses that as the destination address; otherwise, it uses the contents of the First name and Last name fields as the address. So, the Internet-style address is recognized as an incoming address for a QuickMail user.

6 Click OK, and then click OK again.

The descriptive name you entered in the First name field appears in the QuickMail form as the destination address.

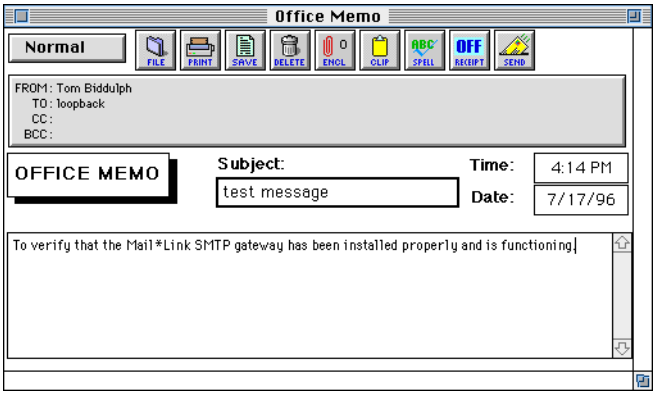

Figure 12 Sending a test message through the gateway

7 Click Send.

The mail message is passed through the Mail*Link SMTP system. In most cases, it should take between two to fifteen minutes for the message to return to you. The exact time, however, depends on your system configuration. When QuickMail sends notification that the message has arrived, read it to confirm that this is your loop around message.

3

General Gateway Preferences

This chapter shows how to set some optional preferences that affect how Mail*Link SMTP operates. All of these options have default values that are reasonable for most networks.

The organization of this chapter follows the order in which these options appear in the Preferences dialog. These are the preferences described in this section:

- General message and log file handling
- Network hosts
- Gateway users and administrator
- Address and header handling
- Status window display and contents
- Overflow handling in the mail queue
- SMTP/TCP network parameters
- Site license processing (available only when a site license is in effect)

Because per-destination message processing, MIME handling, and PC extension mapping offer extensive options, they are handled in a separate chapter. For details, see Chapter 4.

Navigating the Preferences dialog

To open the Preferences dialog, launch the smtp.daemon and open the Preferences dialog by choosing General Preferences in the Windows menu.

The Preferences dialog opens, as shown in Figure 13.

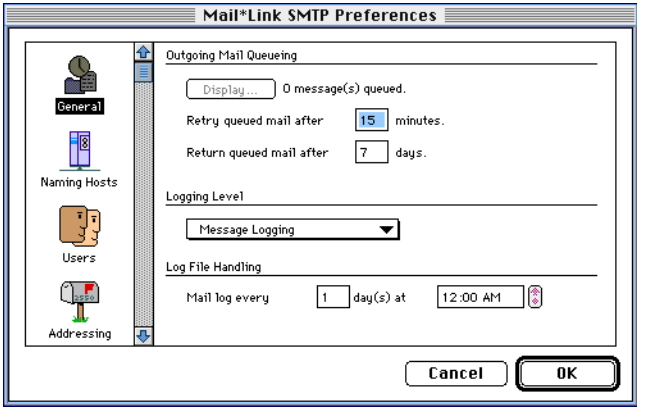

Figure 13 Preferences dialog

Selecting an icon in the left column (the item list) of the Preferences dialog opens a group of related configuration options.

While the smtp.daemon is busy, the General Preferences menu item is dimmed. To suspend the daemon's processing so you can open the Preferences dialog, choose Suspend Processing in the Administration menu.

Saving or canceling changes

If you configure the options related to one icon and then select another one, the changes you made are remembered automatically. You don't need to click OK each time—clicking OK saves all changes and closes the window.

Clicking Cancel closes the window without saving any changes. However, if you have already opened a subdialog and saved changes within that window, clicking Cancel at the top level of the Preferences window does not cancel out those changes.

Keyboard shortcuts

The following keyboard shortcuts are recognized in the Preferences dialog:

- Enter or Return selects the “default” button (the button with a double border).
- Command-period selects the Cancel button.
- Select an item in the left column (the item list) by pressing the Command key and the item’s position in the list (Command-1 to open General options, Command-2 for Naming Hosts options, and so forth).
- Select a button within an options window by pressing the Command key and the first character of the button’s name (for example, press Command-d to select the Display button in the initial window).

General message and log handling

Click the General icon to configure the options shown in Figure 14.

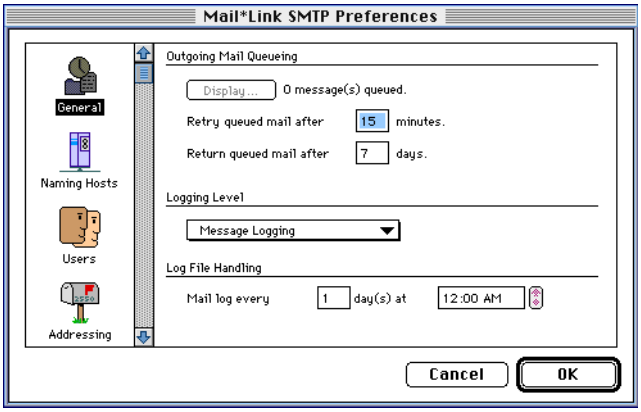

Figure 14 General configuration options

Working with the queue

If there are no messages in the mail queue, the Display button is dimmed. Otherwise, the button is active and the number of messages in the queue is displayed to the right of the button. See Chapter 5 for information about working with queued messages.

Retry queued mail

This option tells the smtp.daemon how to handle mail that cannot be delivered on the first attempt. By default, it retries every 15 minutes. After the amount of time specified in the Return queued mail configuration (below), it gives up and returns the mail to the sender.

You can change how frequently the gateway attempts to redeliver mail by typing a different number in the text edit field. For example, on a very busy network you may want to enter a higher number, such as 30 or 60, to retry delivery less frequently. If you enter 0 in the text edit field, the gateway will not attempt to redeliver mail after one failed attempt. This is not generally recommended.

Return queued mail

This option tells the smtp.daemon when to stop trying to deliver a message and return it to the sender with an indication that the mail was not delivered. By default, it stops trying after one day.

You can change how long the gateway waits before returning undeliverable mail by typing a different number in the text edit field. If you enter 0 in the text edit field, the gateway will not return undelivered mail to the sender. This is not generally recommended.

Changing the log level

The Logging Level pop-up menu lets you specify the amount of information that will be placed in the Log file.

As logging levels increase, more information is placed in the Log file and the gateway may appear to operate slower. The additional information at higher logging levels is useful for debugging problems with general gateway operation or mail delivery to a specific host, but it is not usually needed for long term use.

These are the menu items for controlling what types of messages are written to the Log file:

Table 1: Log levels

LOG LEVEL	DESCRIPTION
No Logging	This level causes no information to be stored in the Log file. This is not recommended.
Message Logging	This is the default level, at which the gateway logs information about messages sent and received as well as error messages.
Plus Status Changes	At this level, the gateway logs messages generated by the previous level and messages related to changes in gateway status, which are preceded by "####".
Plus Debug Messages	At this level, the gateway logs messages generated by the previous levels and debugging messages, which are preceded by the word "DEBUG." Debug messages are useful to debug a connection when establishing it for the first time, or when you notice unpredictable results during gateway operations.
Plus Protocol Transactions	At this level, the gateway logs all messages in the previous categories and low-level protocol transaction messages, which are preceded by the word "PROTOCOL." This log level is provided for debugging possible problems with various protocols, but it causes a significant performance penalty and very large log files.

See Chapter 6 for more details about messages generated in the log file.

Saving and clearing old log files

The smtp.daemon records status and other messages in a log file in the ADMIN folder. By default, the log file is mailed to the administrator once each day at 11:59 PM and cleared as it is mailed. See "Administrator's address" on page 30 for related information.

You can instruct the gateway to mail and clear the log file less frequently by entering a higher number in the text field. The log file will continue to

accumulate messages for the number of days you specify. If you enter 0 in the text edit field, the gateway will never mail (or clear) the log file.

To configure the time of day at which the log file will be mailed and cleared, click on the hour or minute portion of the displayed time. Clicking on the numbers activates up- and down-arrows that can be used to increase or decrease the selected numbers.

Network host preferences

Click the Naming Hosts icon to configure the options shown in Figure 15.

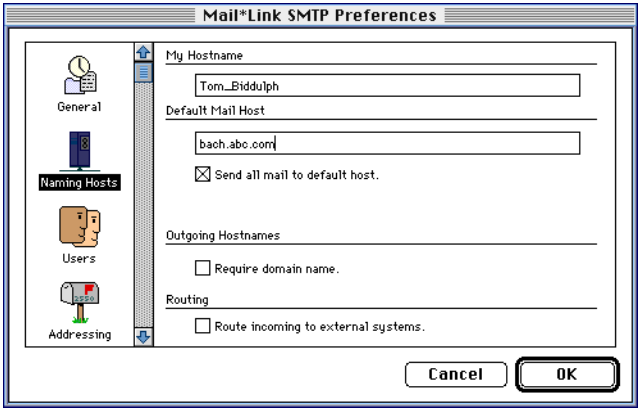

Figure 15 Hostname options

The “My Hostname” field must contain the gateway hostname, and the “Default Mail Host” field must contain the name of another SMTP host on the local IP network. See “Easy smtp.daemon setup” on page 14.

Send all mail to default host

When this option is checked (the default), all outbound mail is sent to system specified as the default mail host.

If you uncheck this option, the smtp.daemon first attempts to translate the hostname portion of an E-mail address to an IP address by using the name-resolver methods specified in the TCP/IP panel of the Preferences

dialog. If an error is returned by the name resolver, the host is labeled as "unknown" and the mail will then be forwarded to the default mail host.

Requiring domain names in outbound addresses

If your site requires that outbound addresses be constructed with domain style hostnames, check the box "Require domain name". If this option is checked and a user sends a mail message that does not contain a domain name, the mail will be returned to the sender with an error message.

Routing to external systems

If you check the routing option, when the smtp.daemon receives inbound mail addressed to a hostname other than its own hostname, it immediately forwards the mail. This enables POP clients such as Netscape Navigator or Internet Explorer to use the gateway as a router.

Gateway users and administrator

Click the Users icon to configure the options shown in Figure 16.

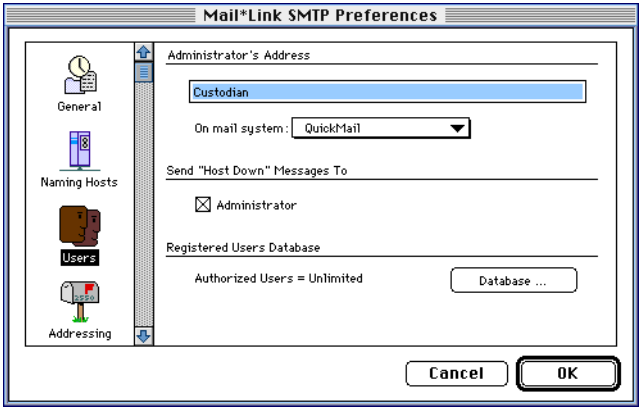

Figure 16 Users Preferences

Administrator's address

The address specified in the edit field will receive "Host Down" messages, mail addressed to "PostMaster" and other administrative messages sent by the gateway, as well as the log file. The default string "Custodian" is present in this field, which refers to the user selected as custodian of the gateway MailCenter.

- To specify a QuickMail user other than the default "Network Manager," choose QuickMail in the pop-up menu and then type the user's full QuickMail address including the MailCenter name in this format:

  First Last@Mailcenter

  For example,

  `Joe Smith@ABC1`

- To designate an Internet address for the administrator, choose SMTP in the pop-up menu and then type the user's full Internet address.

If the administrator's address is an Internet address and that address is reached through the non-responding system, the administrator will not receive "Host Down" messages until the condition causing them has been cleared up. Beware of this when deciding the address used for the administrator.

Send Host Down messages to administrator

If this option is unchecked, no "host down" messages are sent.

When this option is checked and the smtp.daemon is unable to contact a target host after three attempts, a "host down" message is sent to the administrator. The message includes the time of the first failed attempt, the number of attempts made, and the interval between attempts. It is repeated after continued attempts to reach the target host. The first message is sent after 3 failed attempts, the second after 9 attempts, the third after 21 attempts, and so forth, as shown below:

3, 9, 21, 45, … (the interval between messages is doubled)

The "host down" indication is reset when the smtp.daemon is restarted, when a "manual connect" is performed, or when the smtp.daemon is able

to eventually contact the specified host. A "host-back-up" message is sent to the administrator when the smtp.daemon either successfully connects to the host or receives an inbound message from that system.

Opening the registered users database

The number of QuickMail users authorized to send mail through the gateway is displayed in this area. To open a window in which you can work with the list of registered users, click the Database button, or press Command-d. See Chapter 5 for details.

Address and header handling

Click the Addressing icon to configure the options shown in Figure 17.

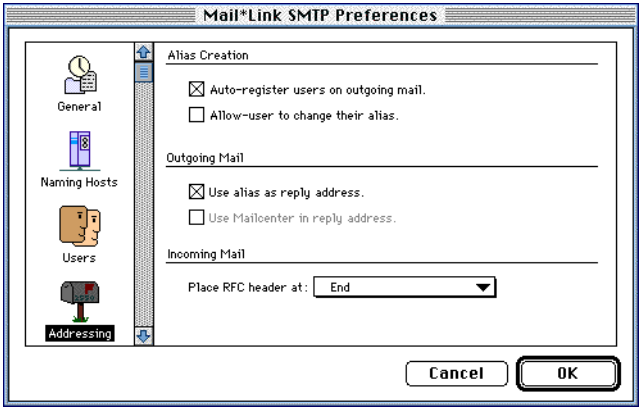

Figure 17 Addresses and headers

Autoregister users on outgoing mail

When the autoregister option is checked (the default), the smtp.daemon registers a QuickMail user in the database automatically the first time the user sends outbound mail through the gateway.

If you uncheck the autoregistration option, you must register QuickMail users manually (see Chapter 5). If a site license is in effect, see "Site licenses only" on page 44 for a way to turn off autoregistration and allow anyone to send mail.

Autoregistration occurs after the smtp.daemon has checked that the maximum number of authorized users has not already been registered (see Chapter 5 for details). The smtp.daemon then creates a record in the registered users database containing the user's name, mail server name, and an alias.

The alias it generates is derived from the user's QuickMail login name, but it is legal in SMTP mail systems (for example, it contains no space characters). The encoding used in alias generation is determined by the options described in "Alias generation options" on page 42.

The smtp.daemon also guarantees that a user's alias will be unique within the database. For example, suppose both the Sales and Marketing Servers have a user named "Joe Smith" and both users access the gateway. The first user will have the alias "joe_smith", the second will be given the alias "joe_smith1", and so forth. This method can handle up to ten identical user names.

Allowing users to change their own alias

This option is unchecked by default. We recommend that you leave it unchecked unless the QuickMail users at your site are knowledgeable about legal aliases.

If this option is checked, QuickMail users can modify the Alias field in their own user records by sending a message addressed to:

```
mailer-daemon
```

with these words in the Subject field:

```
change alias
```

and a new alias specified in the body of the message in this format:

`alias` *new-alias*

For example, for a user to change his alias to "bid":

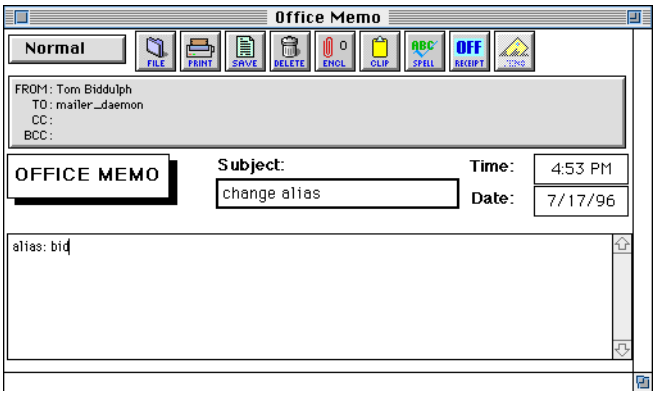

Figure 18 User changing his own alias

If the "Change Alias" messages is sent to mailer-daemon and the user is not registered, the smtp.daemon registers the user in the database with the alias specified in the user's message.

If users change their aliases after sending mail through the gateway, the "reply" function will fail when recipients reply to that mail.

Regardless of the state of this option, a registered user can request his or her alias by sending a mail message addressed to mailer-daemon with the words "request alias" in the Subject field.

Reply address options

The reply address options govern how the smtp.daemon generates addresses for outbound mail from QuickMail users.

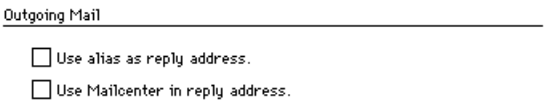

Figure 19 Reply address options

When the "Use Alias as reply address" option is checked, the "Use Mailcenter" option is disabled.

- Use Alias as reply address checked (the default)

  When this option is checked, the reply address is taken from the Alias field in the registered users database.

  If the Alias field contains the user-name portion of an address, the smtp.daemon appends its own hostname to create the reply address, for example:

  ```
  joe_smith@smtpgw.abc.com
  ```

  Or, if the Alias field has been modified to contain a full address, that address is used directly. For example, if the Alias field contains "smith@abc.com", the reply address is:

  ```
  smith@abc.com
  ```

- Use Alias as reply address unchecked

  When this option is unchecked, the Alias field is not consulted. Instead, the smtp.daemon applies its built-in translation table to create the internal address representation of the user's name, appends its own hostname, and uses that as the reply address. See "Internal address representation" on page 87 for more details.

- Use Mailcenter in reply address checked

  If you check "Use Mailcenter in reply address," the smtp.daemon acts as described immediately above but it includes the user's mail server name. See "Site licenses only" on page 44 for related issues, and "Internal address representation" on page 87 for more details.

Header placement in incoming mail

This option determines where RFC and MIME header information will be placed in inbound mail messages.

RFC header information is defined in RFC 822. It includes "From" and "To" fields as well as intermediate routing information between the source and target systems, and can include a variety of optional fields. If a message is routed through several intermediary systems, the message header information can become quite extensive, sometimes exceeding 2000

characters. Because RFC header information can be quite long, many sites choose to place it at the end of the message rather than at the beginning, and “End” is the default setting.

MIME header information is contained only in messages received from systems that support MIME encoding. A MIME message will always contain the string “MIME-Version:” in the RFC header.

- Start

  If Start is selected, RFC headers are displayed at the top of each message. The MIME header information will be left as it was when the mail message was received, although some data (such as enclosures) will be deleted and attached to the received message.

- End (the default)

  If End is selected, RFC headers are displayed at the bottom of the message. All of the MIME header information will be placed after the body of the message (but before the RFC headers), which allows for a cleaner presentation of the message itself.

  See Chapter 4 for information about how multiple MIME text body parts are handled when the header information is displayed at the end of the message.

- No Header

  If No Header is selected, the RFC header is discarded. *This is not generally recommended*. The MIME header information is not discarded, because there could be valuable information in MIME headers that is needed for the interpretation of the mail message itself. Instead, the MIME header information is treated in the same manner as when the “End” option is selected.

Status window display

The smtp.daemon can display a status window that is dynamically updated with information about mail processing. Click the Status Window icon to configure the options shown in Figure 20.

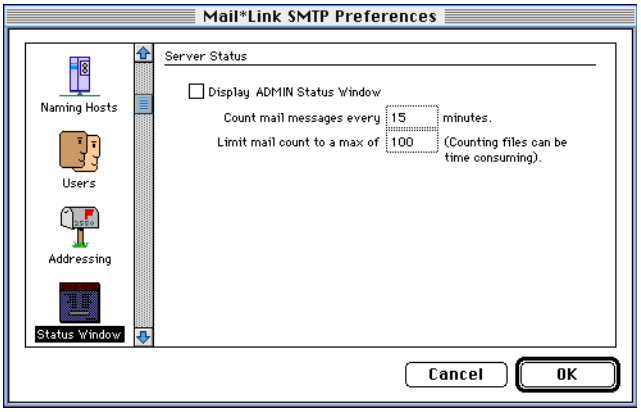

Figure 20 Status window options

If you check the Display ADMIN Status Window option, a status window is displayed whenever the smtp.daemon starts up (Figure 21). You can also activate the status window by selecting Status in the smtp.daemon Windows menu.

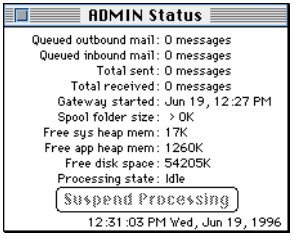

Figure 21 ADMIN Status window

The first four fields in this window show the number of messages queued, sent, and received by the smtp.daemon, and the remaining fields show state and memory information.

The Suspend Processing button suspends all gateway operations for 15 seconds. However, we recommend that you do not suspend operations while the smtp.daemon is actively processing mail.

To ensure that the information in the status window is up-to-date, the gateway software "walks through" the spool folder, counts the number of messages in the queue (both inbound or outbound messages), and then

updates the status window with the latest information. By default, the fields in the status window will be validated every 15 minutes.

If you want to use fewer resources to keep this information updated, type a number greater than 15 in the edit field. If you are monitoring the gateway closely, you can temporarily set this number much lower to update the gateway every minute or so. We recommend that you use a number lower than 15 only when troubleshooting, because the process of counting messages can be resource-intensive.

If there are a large number of messages in the queue, counting them can be quite time-consuming. The number in this Limit mail count field tells the gateway to stop counting when it reaches this number, 100 by default. The status window will indicate that this number has been reached (and probably exceeded) by displaying 100+.

If you want to conserve resources and you don't need to know the number of messages at any given time, you can type a lower number in the edit field. If you want to know the number of messages in the queue beyond 100 messages, type the number greater than 100 in the edit field.

Mail overflow conditions

Mail messages are queued as multiple files in the spool folder. Each message may include two or three physical files, depending on whether the message contains file enclosures. Mail overflow conditions occur when there are more files in the spool folder than the Macintosh file system can handle properly. Every few minutes, the smtp.daemon asks the MacOS the number of files in its spool folder. This is a very quick and efficient operation except when there are many files present, when the operation can become very slow, consuming much of the daemon's time.

Occasionally, a problem on the network, in the default mail host, or in the local Macintosh mail system may prevent the smtp.daemon from transferring outbound or inbound mail. If the problem persists long enough, or if the smtp.daemon is busy enough during the downtime, the smtp.daemon' s queue can become so full of mail that the smtp.daemon is unable to function, even after the problems causing the mail overflow condition have been resolved.

To configure the smtp.daemon to clear up mail overflow conditions when it detects them, click the Mail Overflow icon to open the window shown in Figure 22.

On PPC systems, the Finder Scripting extension must be installed. Otherwise, the Mail Overflow preferences are disabled.

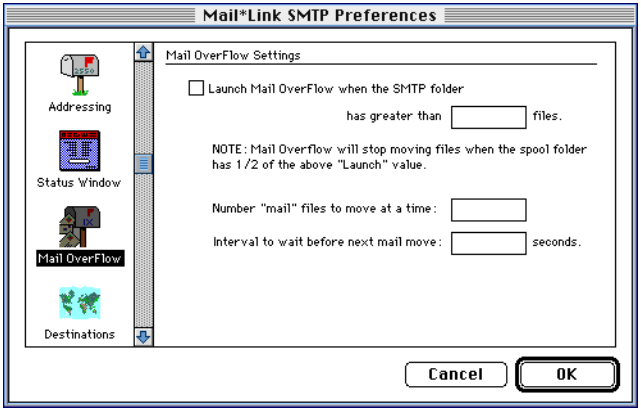

Figure 22 Mail overflow handling

When the smtp.daemon detects an overflow condition, it launches the Mail Overflow application and then quits. When Mail Overflow starts up, it briefly displays a status window that shows the number of files in the spool folder, renames the spool folder "Overflow" and then creates a new (empty) spool folder. At this point, it relaunches the smtp.daemon.

When the daemon comes up, Mail Overflow begins moving mail files from the Overflow folder into the new spool folder at a rate that the daemon can handle efficiently. By default, it moves 5 messages (each of which can include two or three physical files) and then waits 20 seconds for the smtp.daemon to transfer several messages. Mail Overflow repeats this "spoon feeding" process until the pending messages have been transferred. Mail Overflow quits automatically and removes the Overflow folder when its job is finished.

To configure the smtp.daemon to launch Mail Overflow automatically, check the "Launch Mail Overflow" checkbox. These are the item you can specify:

- has greater than X files

  By default, the smtp.daemon launches Mail Overflow if the spool folder has more than 200 files. Do not set this value lower than 100.

- Number “mail” files to move

  This field specifies the number of mail files to move at a time. A mail file includes two or three actual files, depending on whether the mail has enclosures.

- Interval to wait before next move

  This field specifies the number of seconds Mail Overflow waits before moving additional files into the spool folder. This pause gives the daemon a chance to finish working before receiving new files. If the Macintosh has a fast CPU, you can decrease this interval. If it is very slow, you may want to increase the interval.

You can launch the Mail Overflow application manually if you prefer. Launching the application manually enables you to specify a different spool folder. See Appendix B for more details.

SMTP/TCP network parameters

Click the SMTP/TCP icon to set these options.

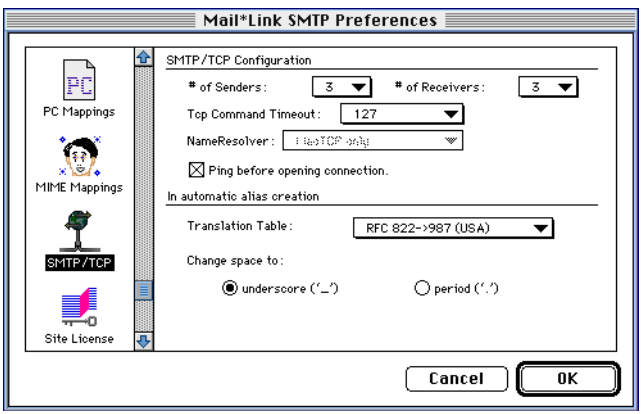

Figure 23 SMTP/TCP network parameters

Changing the SMTP and TCP configuration

The default settings for the gateway's SMTP/TCP configuration are reasonable for most sites. You may want to change the default values if the IP network is large or complex.

Number of sending and receiving threads

By default, the smtp.daemon is configured with three sender and three receiver threads, all of which can process mail concurrently. If the smtp.daemon is a heavy traffic gateway for incoming mail, you can increase the number of receiving threads to increase the throughput of the gateway. Or, if the gateway handles a large amount of outbound mail and is consistently maxing out the number of threads for sending mail, you can increase the number of sending threads to increase throughput.

If you set the number of Receiver threads to zero, the smtp.daemon will not receive mail.

Each thread needs about 24K of memory, so if you add 4 receiving threads (for example), the smtp.daemon will require close to 96K additional memory. Make sure that the smtp.daemon has sufficient application memory to create the additional threads.

Setting TCP command timeouts

The smtp.daemon sends out TCP commands to initiate connections with the default mail host. By default, it waits 127 seconds before timing out the command and canceling the request. This is the recommended minimum, because it allows for reliable connections even during high-traffic hours. However, if there are several IP routers on your local network, you will improve the reliability of your connection by setting this number higher, to 191 or the maximum, 255 seconds.

If you need to increase the latency of the timeout period due to the complexity of your local IP network configuration, click the TCP Command pop-up menu and select 191 or 255.

Choosing how name resolution occurs

This section applies only to Macintosh systems running MacTCP. For Open Transport systems, these options are dimmed. See the Open Transport 1.1 manual for a description of the Open Transport name resolution capabilities.

Name resolution is the process by which an IP address is obtained for a specified hostname. Host names and their respective IP addresses can be stored locally in the MacTCP Hosts file within the System Folder, or in the domain name system (DNS) on a network server. See Chapter 2 for related issues.

If MacTCP has not been configured with the address of a domain name server, the default "MacTCP Only" is the only available option here. Addresses must be obtained from the Hosts file within the System Folder. A record for the default mail host must be present in that file. (See the online *MacTCP Guide*.)

If MacTCP *does* have a domain name server configuration, the other options in this menu are enabled. The option you choose determines the order in which records are requested, which can be significant in determining how mail is routed. The main issue is the use of Mail Exchange (MX) records. The MacTCP name resolver can read resource records in the formats understood by MacTCP (such as A, NS, CNAME, and HINFO). The StarNine resolver understands MX record format, which can contain routing information to another system, as well as the formats understood by MacTCP.

- MacTCP Only

  If there is no DNS configuration in MacTCP, all target addresses (such as the default mail host) must reside in the Hosts file. If there is a DNS configuration, the resolver first checks the local Hosts file. If the initial query does not return an address, the resolver queries the DNS system for a resource record that MacTCP understands (not MX).

- MacTCP then StarNine

  The resolver first checks the local Hosts file. If the initial query does not return an address, the resolver queries the DNS system for a

resource record that MacTCP understands (not MX). If that query fails to return an address, the resolver queries the DNS system for an MX record.

- StarNine then MacTCP

  The resolver first queries the DNS system for an MX record. If the initial query does not return an address, the StarNine resolver asks for *all* records about the host (a wildcard query). If an answer is still not obtained, the MacTCP resolver checks the local Hosts file and finally, if no address is found, queries the DNS system for an resource record it recognizes (not MX).

- StarNine Only

  The resolver queries the DNS system for an MX record. If the initial query does not return an address, it then queries the DNS system for *all* records (a wildcard query). The local Hosts file is not used.

Sending a ping packet before a connection attempt

When the Ping option is unchecked, the smtp.daemon attempts a TCP connection with the target host and times out after number of seconds specified in the “Command Timeout” pop-up menu if that host is unavailable. During the connection attempt, the gateway does not perform any other activity, such as processing mail, unless the smtp.daemon is operating in a threaded environment.

If this option is checked, the smtp.daemon sends an ICMP ping packet to the target host before attempting to open a TCP/IP connect session. The ping packet verifies that the host is available before the gateway attempts a TCP connection.If the gateway sends a ping packet and doesn’t receive a response, it repeats the ping packet 10 times at 1 second intervals before giving up on the connection.

Alias generation options

These options affect the encoding used to generate aliases and the character used to replace the space character in reply addresses. The selected translation table governs the treatment of all 8-bit and RFC 822-illegal characters other than the space character, and the space character is translated based on the “change space to” setting.

Translation tables

Unless your local distributor instructs you to select a different table, you should leave the default “RFC 822->987 USA” table selected.

▼ RFC 822->987

RFC 822->987 USA is the correct table for sites within the United States. When RFC 822->987 USA is selected, the smtp.daemon uses the translation table shown below during alias generation.

Table 2: RFC 822->987 translation table

INPUT CHARACTERS	REPRESENTATION IN ALIAS
. dot	#d#
(left parenthesis	#l#
) right parenthesis	#r#
, comma	#m#
: colon	#c#
\ backslash	#b#
# hash-sign	#h#
@ at-sign	#a#
“ double-quote	*#ddd#*
< less than	*#ddd#*
> greater than	*#ddd#*
; semicolon	*#ddd#*
[left bracket	*#ddd#*
] right bracket	*#ddd#*
space or non-breaking space	*space replacement character*
8th-bit on characters	*#ddd#*

- Transparent (8-bit)

  If you select the Transparent (8-bit) table, the smtp.daemon performs the translations shown above but it does not translate characters greater than the tilde (8th-bit-on characters). This enables the administrator to set aliases that include 8-bit characters. The receiving system and all intermediary transport systems must be completely 8-bit clean.

- No Mapping

  The No Mapping table is recommended if you are using MIME encoding on message bodies, because the RFC header items will be encoded in MIME.

Change space to

Because many Internet sites prefer to use periods instead of underscores as a space replacement character, you can use this option to tell smtp.daemon to use period characters instead of the default underscores when generating aliases and reply addresses. See “Internal address representation” on page 87 for related information on how the period character is handled.

Site licenses only

If the smtp.daemon finds a site license specified in the Key file, the Preferences window contains one extra icon named “Site License” (Figure 24).

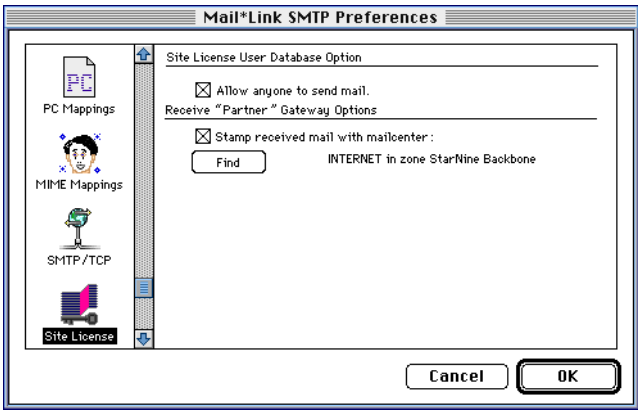

Figure 24 Site license window

Site license database option

If autoregistration is turned on in the smtp.daemon (page 31), the "Allow anyone to send mail" option has no effect, because a site license already allows all QuickMail users to send mail out through the gateway.

If autoregistration is unchecked and the "Allow anyone to send mail" option is checked, the registered users database is bypassed altogether. The smtp.daemon generates an RFC 822-legal alias each time the user sends mail, the mail is always sent, and no names are added to the database. This enables site-license administrators to eliminate any administrative overhead that might be involved in managing the database, but it also eliminates some of the smtp.daemon procedures for ensuring unique addresses.

To make sure that QuickMail users are always given a unique reply address, you should configure the smtp.daemon to include MailCenter names in reply addresses if you turn off autoregistration and use this option. That way, if there are two QuickMail users named "Joe Smith" who log into different MailCenters, they will never receive each other's mail. See "Use Mailcenter in reply address checked" on page 34.

Configuring partner gateways

Site licensees can configure “partner” Mail*Link SMTP gateways to distribute the processing load of sending and receiving a large amount of mail. One of the partner gateways is used as a send-only gateway, the other as a receive-only gateway.

The two partner gateways must run on separate Macintosh systems, but both gateways must have the same name in the My Hostname field.

In the example configuration shown in this section, the /etc/hosts file on the default mail host is modified. On your network, you may need to change the hostname and IP address specification for the gateways on the default mail host, on all hosts on the network, or on the DNS servers in your local environment. The exact changes you need to make are completely dependent on your existing configuration, so they are not specified here. If you need help, contact StarNine Technical Support.

Making an existing gateway a send-only partner

The send-only partner gateway is responsible for sending outbound mail.

In this example, one existing Mail*Link SMTP gateway is overloaded and you want to distribute its load by configuring a partner gateway. In this situation, make the existing gateway the send-only partner. That way, QuickMail users can continue to select the same MailCenter name for sending their outbound mail.

Assume the following parameters for the existing gateway:

- MailCenter name: GATEWAY1
- My Hostname: smtpgw.abc.com
- IP address in MacTCP: 198.211.93.13
- Entry in hosts file (such as /etc/hosts) on default mail host:

  ```
  198.211.93.13 smtpgw.abc.com
  ```

To make this gateway a send-only partner, you must complete these steps:

1. Quit the smtp.daemon.
2. Modify the Macintosh IP address in MacTCP.

Assign the Mac a unique, unused IP address obtained from the IP network administrator. For example,

```
198.211.93.23
```

3. Restart the Macintosh.

4. Create a new entry in the hosts file (such as /etc/hosts) on the default mail host, using the new IP address and a unique, unused hostname.

   For example,

   ```
   198.211.93.23 sendgw
   ```

Do not delete the existing entry in the hosts file (such as /etc/hosts)— it will be used by the receive-only partner. The hosts file entry for the send-only gateway Mac uses a hostname that is not consistent with the My Hostname configuration for the gateway, so incoming mail addressed to "user@smtpgw.abc.com" will not be sent to the send-only gateway's IP address.

5. Launch smtp.daemon and open the Preferences dialog.

6. Leave the My Hostname field as is.

7. Click the Site License item in the Preferences dialog and make sure that the "Stamp received mail with mailcenter" option is *unchecked*.

8. If you want to prevent this gateway from receiving mail, click the SMTP/TCP icon and set the number of Receiver threads to zero (0).

   See "Changing the SMTP and TCP configuration" on page 40 for details. If you don't set the number of Receiver threads to zero, the send-only gateway will still be able to receive mail, but only if a user includes that hostname in the incoming address, such as "user@sendgw.abc.com".

9. Click OK in the Preferences dialog.

   After you have completed the send-only configuration, follow the steps in the next section to create a receive-only partner.

Configuring the receive-only partner

When the receive-only partner receives inbound mail, it constructs reply addresses that point to the send-only partner gateway. So, when QuickMail users reply to messages they receive from an SMTP mail system, the reply mail is passed automatically to the send-only gateway for disposition.

The receive-only gateway will still be able to send mail, but only if a user or NameServer address specifically names the receive-only gateway in the outgoing address. You cannot set the number of Send threads in the smtp.daemon to zero, but you can reduce the number of threads to one.

In this example, the receive-only partner will have the following configuration values:

- MailCenter name: GATEWAY2
- My Hostname: smtpgw.abc.com
- IP address in MacTCP: 198.211.93.13
- Entry in /etc/hosts on default mail host:

  ```
  198.211.93.13 smtpgw.abc.com
  ```

To configure the receive-only partner gateway, follow these steps:

1. Install all required QuickMail and Mail*Link SMTP components on the second Macintosh.
2. In MacTCP, assign the IP address that was previously assigned to the “old” gateway (the current send-only partner).

   For example,

   ```
   198.211.93.13
   ```
3. Restart the Macintosh.
4. Configure QM Administrator, create a new gateway MailCenter of type ML SMTP, and assign a unique MailCenter name, for example,

   ```
   GATEWAY2
   ```
5. Launch smtp.daemon and open the Preferences dialog.

6 Assign the same hostname specified in the My Hostname field of the send-only gateway.

For example,

```
smtpgw.abc.com
```

It doesn't matter which hostname you use, but both the receive-only and send-only gateways must have the *same* hostname.

7 Click the Site Licenses item.

8 Check the "Stamp received mail with Mailcenter" option.

9 Click the Find button.

10 In the Chooser-like dialog that opens, highlight the MailCenter name of the send-only partner gateway, and then click OK.

11 Click OK in the Preferences dialog.

4

Message and Enclosure Processing

This chapter shows how messages and enclosures to and from particular destinations will be encoded and processed. It covers these topics:

- Per-destination message and enclosure processing
- PC filename extension mapping
- MIME processing

If you are not familiar with the Preferences interface, you may want to read the first section of Chapter 3 on page 23, which describes how to open and navigate the interface.

About the destination database

The destination database contains destination addresses and associated methods for processing mail. A destination can be a user, a host, or a domain name. A method defines how the message body and enclosure should be processed before forwarding to a particular destination.

When the smtp.daemon receives outbound mail, it looks for each of the recipient addresses (or a component of each address) in the database. If found, the smtp.daemon uses the specified method to process the mail. If the recipient address is *not* in the database, the daemon uses the default processing method, described in “Default processing” on page 53.

For outbound mail, the smtp.daemon performs these steps in order:

1. Enclosure processing based on file types of enclosures
2. Body processing
3. Enclosure processing based on number of enclosures
4. Enclosure processing, compression
5. Enclosure processing, binary data encoding

When the smtp.daemon receives inbound mail, it follows the same basic procedure except in the case of MIME processing. If the smtp.daemon detects a MIME header, it always MIME-decodes the message. For all other types of processing, it looks for the FROM address in the database and if the address is not found, it uses the default decoding method.

For inbound mail, the smtp.daemon performs these steps in order:

1. Enclosure processing, binary data decoding
2. Enclosure processing, uncompression
3. Enclosure processing based on number of enclosures
4. Enclosure processing based on file types of enclosures
5. Body processing

The smtp.daemon performs the first two steps on all inbound messages, whether or not the FROM address is in the destination database.

Creating the destination database

Click the Destinations icon to open the window shown in Figure 25.

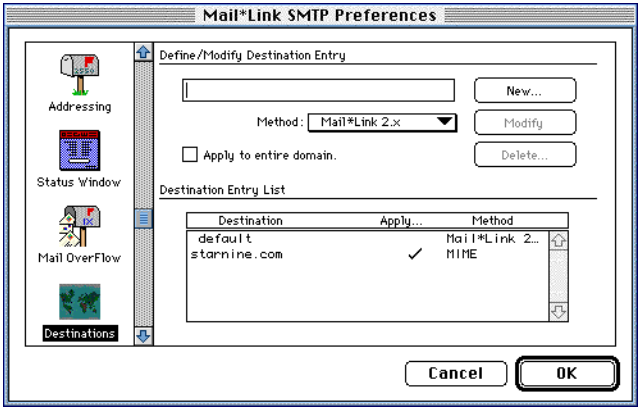

Figure 25 Destinations window

The Destinations window enables you to specify a destination (a domain, host, or user) and configure an appropriate message and enclosure processing method for that destination.

Default processing

If you don't configure any destinations or methods in the Destinations window, the smtp.daemon Binhexes all outbound file enclosures. This default is determined by the fact that the "default" entry in the destination database is set to the Mail*Link 2.x method, which is a Binhex method compatible with earlier versions of the Mail*Link SMTP gateway.

When the gateway gets an outbound message whose destination address is not in the database, the method associated with the "default" entry is always used. You can change the default enclosure processing method by selecting the "default" entry and assigning a different method.

You cannot delete the default entry, but you can change the method associated with it. The default method is used for all destinations that are not explicitly listed in the destination database.

Defining a destination

To add a destination to the database, specify the destination address in the text field at the top of the Destinations window. The address you specify can be in one of these formats:

When the smtp.daemon receives an outbound mail message, it searches the destination database for each recipient address in the message. Destination addresses must be in one of the following formats:

- A user address

  For example:

  ```
  joe@smtpgw.abc.com
  ```

  If you specify a user's address, the method applies only to mail exchanged directly with that user. If the smtp.daemon finds the addressee's user address in the database, it applies the assigned method to the outbound message and enclosures. Otherwise, it tries to match the addressee's hostname.

- A hostname

  For example:

  ```
  smtpgw.abc.com
  ```

  If a hostname is specified, the method applies to mail exchanged with that host, which may include several users. For example, the assigned method will be used for mail addressed to any of these addresses:

  ```
  mary@smtpgw.abc.com
  joe@smtpgw.abc.com
  chris@smtpgw.abc.com
  ```

  If the smtp.daemon finds the addressee's hostname in the database (and did not find the addressee's full address), the daemon applies the specified method to the outbound message and enclosures. Otherwise, it looks for the addressee's domain name.

- A domain name

  For example:

  ```
  abc.com
  ```

  If the hostname is *not* found, the smtp.daemon searches the database for the domain name.

  If it finds that domain name (and did not find the addressee's full address or host name), it checks the status of the Apply To Entire Domain option. If the Apply To Entire Domain option is checked, the daemon applies the specified method to the outbound message and enclosures.

If you specify a domain name and check the Apply To Entire Domain option, the method you assign to this destination applies to mail exchanged with all hosts and users within that domain. If the Apply To Entire Domain option is not checked, the method applies only to mail exchanged with addresses that specify the domain name exactly.

▼ Default

If the domain name is not found or if it does not have the Apply To Entire Domain option checked, the smtp.daemon applies the method associated with the default entry.

The smtp.daemon always has at least one entry (named default) in the destination database. You cannot delete the default entry, but you can change the method associated with it. The method assigned to the default entry is used for all destination addresses that are not specified in the database.

Creating a destination entry

A destination entry specifies both a destination address and a message-processing method. To create a destination entry that specifies the MIME message-processing method for all messages destined for M.I.T., follow these steps:

1. Specify the destination address in the text field in the top half of the window.

   You can specify a destination address to add it to the database (see "Defining a destination" on page 53). Or, you can select a destination in the list. When you ciick on an entry, it appears in the text field.

2. Open the Method pop-up menu.

3. Choose a method to use.

   For example, choose MIME under "Use Method...".

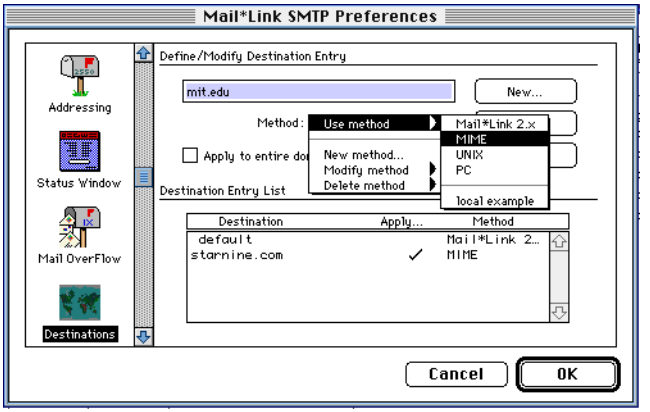

Figure 26 Assigning a method to a destination

4 Click New to add the new destination and method assignment to the database.

You will be asked to confirm that you want to create a new entry. When you click OK, the entry is added to the Destination Entry List.

To see which transmission characteristics are specified in a predefined method, select the method and click Modify. You can view the individual characteristics, but you cannot modify or delete the characteristics in a predefined method.

- The Mail*Link 2.x predefined method binhexes outbound enclosures. This is recommended for earlier versions of the Mail*Link SMTP gateway.
- The MIME method uses MIME enclosure processing.
- The UNIX method uses encoding suitable for UNIX sites that do not support MIME.
- The PC method is recommended for PC mail systems that do not support MIME.

Changing configurations

To modify a destination entry by changing the address or selecting a different method, select it in the list. Then, make the desired changes and click Modify.

To delete a destination entry, select it and click Delete. (You cannot delete the default entry.)

You cannot modify the predefined methods, but you can modify a user-defined method by selecting Modify Method in the Method pop-up menu. You can then choose the name of the method in the sub-menu, and change the characteristics shown in the method definition windows (see “Configuring a method” on page 57). The new transmission characteristics will affect all destination entries that use this method.

To delete a method, choose Delete Method in the Method pop-up menu and choose the name of the method. If that method has been applied to a destination address, you will not be able to delete it.

Configuring a method

A *method* is the combined specification of characteristics to be applied in all five steps together with the line-wrap and enclosure size limits.

If none of the predefined methods provide exactly the right combination of enclosure handling and transmission characteristics, you must define a new method and specify the characteristics you need. To define a new method:

1. Open the Method pop-up menu.
2. Choose New Method in the submenu.

   A dialog box is displayed requesting a name for the new method.
3. Specify a name for the new method.

   For example:

   `my-mime`

   and then click OK.

   A method definition window opens.

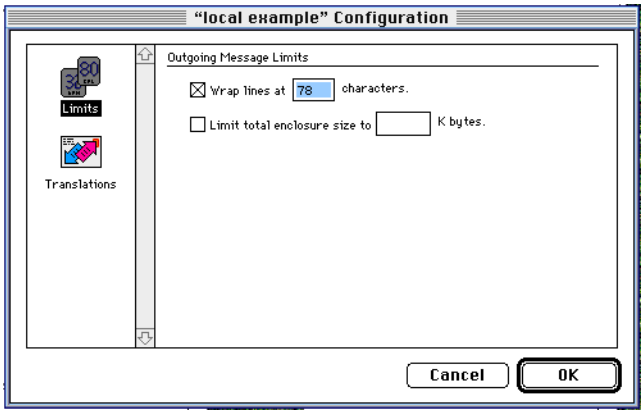

Figure 27 First method definition window

You can open the method definition windows for an existing method by double-clicking the name of the method.

In this method definition window, you can set the outgoing message limits (see "Outgoing message limits" on page 59).

4 Click the Translations icon to open another definition window:

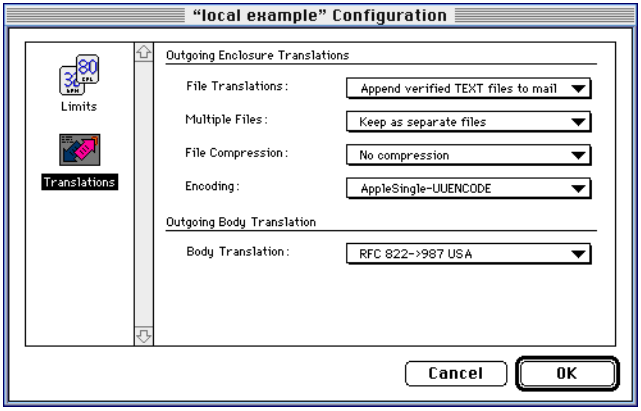

Figure 28 Second method definition window

In this method definition window, you can configure these processing methods:

5. Set the outgoing enclosure translation options (see "Outgoing enclosure translations" on page 60).
6. Set the outgoing body translations (see "Outgoing body translations" on page 65).
7. Click OK.

After you have defined the new method, you can assign it to destinations as described in "Creating a destination entry" on page 55.

*Third-party developers may modify Mail*Link SMTP to include additional enclosure handling methods and translation tables, which can then appear as options in the pop-up menus, or as additional icons in the left column of the method definition window. If that is the case, your local distributor should provide additional documentation for options not described in this chapter.*

Outgoing message limits

When the Limits icon is selected in the method definition window, you can configure these options:

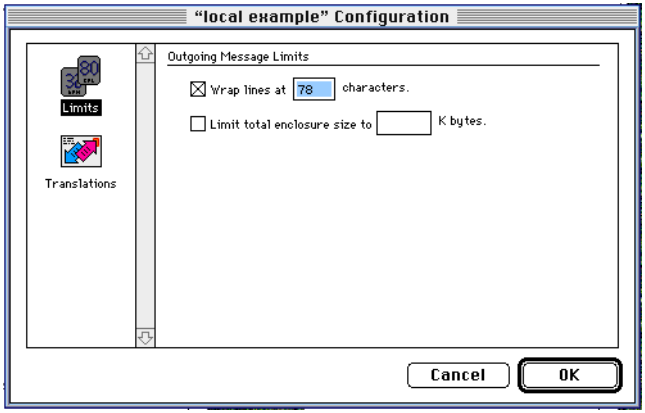

Figure 29 Setting message limits

Wrap lines

By default, the smtp.daemon inserts end-of-line characters when message-body lines exceed 78 characters. To do so, it counts backwards from the specified character position (78) in every line it sends until it finds a white space character (space or tab character), which it replaces with the appropriate end-of-line character. If a white space character cannot be found, the line will be scanned forward until the first white space character is encountered. This character will be replaced with the appropriate end-of-line character. The next line is started at the character following the new end-of-line character.

We recommend that you leave the default 78 character line-wrap unless an international distributor instructs you to set a different number. In addition, do not specify a line-wrap limit below 78 characters when MIME is in use, or MIME headers will not work. We recommend that you uncheck the line-wrap option when using Quoted-Printable MIME.

Limit total enclosure size

This option allows you to control the total size of enclosures sent by the SMTP gateway.

The limit specified here is for the total size before encoding. In general, encoding will increase the size of the data sent by about a third. This option does not apply to the size of enclosures received form the outside world for delivery to a QuickMail user.

If you do not wish to place a limit on the enclosure size, leave the item unchecked. If you do wish to place a limit, check the box and then specify the maximum enclosure size in 1024-byte multiples. If you check this option and specify a limit, mail that contains more enclosure data than allowed by this limit will be returned to the Macintosh user who originated the mail.

Outgoing enclosure translations

When the Translations icon is selected in the method definition window, you can configure the options shown in Figure 30.

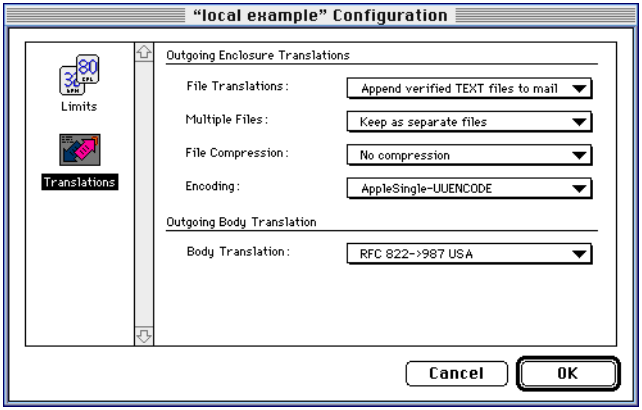

Figure 30 Defining message processing methods

All outgoing and incoming messages are passed through a sequence of steps, as described in "About the destination database" on page 51.

To choose the right translation and encoding for outbound Macintosh files, first find out if the target system(s) support MIME. For Macintosh files of type TEXT, you should also consider whether the file contains 8-bit Macintosh characters that might not be understood by a Unix or PC system. For BINARY files, consider whether the target system will be able to use the Macintosh-specific information.

File translations

File translations are performed based on the file type. At this release, most of these options relate to files of type TEXT.

- None

  Do not apply a translation method based on file type.

- Append TEXT Files to Mail

  If the file type is TEXT, append it to the message body. The translation method specified for body text will be applied before the message is sent. *This is the recommended translation method for sites that don't support MIME.*

- Append Verified TEXT Files to Mail

  If the file type is TEXT, scan the first 2048 bytes of the file to verify that no control characters are found before appending the file to the message body. The translation method specified for body text will be applied before the message is sent. If control characters are found, the file will be treated as a binary file and passed to subsequent steps. *This is the recommended translation method for recipients that use QuickMail for Windows or QuickMail for DOS.*

- Text to Plain Text—MIME

  If the file type is TEXT, insert it in the message as is (8 bit or 7 bit).

- Text to ISO-8859-1 Text—MIME

  If the file type is TEXT, convert the characters in the file to ISO-8859-1 before inserting it into the file as is (8-bit or 7-bit). For incoming files, decode from the ISO-8859-1 character set to Macintosh characters. See Appendix A for the translation tables.

- Text to Quoted-Printable Text—MIME

  If the file type is TEXT, use the MIME quoted-printable format that allows 8-bit characters and inserts line breaks every 76 characters. For incoming files, decode from MIME. See “MIME mappings” on page 73 for a definition of the quoted-printable format.

- Text to Quoted-Printable ISO-8859-1 Text—MIME

  If the file type is TEXT, convert the characters in the file to ISO-8859-1 before converting the file into quoted-printable format. For incoming files, decode MIME and decode from the ISO-8859-1 character set to Macintosh characters. See Appendix A for the translation tables. See “MIME mappings” on page 73 for related information. *This is the recommended translation method for recipients that support MIME.*

- File Type to PC Extension

  Examine the file type of the enclosure and map it to an appropriate DOS filename extension. For example, text files will be assigned the extension .TXT, and Excel files will be assigned the extension .XCL. For incoming files, examine the 3-character filename extension and map it to the appropriate Macintosh type and

creator (see “PC mappings” on page 67). *This is a useful translation method when sending to a site that supports PCs.*

You can specify your own PC filename extension mappings, as described in “PC mappings” on page 67. The mappings are applied only if the FROM address is included in the destination database and this translation characteristic is set for the address.

Multiple file enclosures

- Keep as separate files

  Do not combine multiple files. Each file is handled separately according to the other options; for example, text files are processed according to the File Translation option and binary files are encoded separately using Encoding setting, described below. *This is the recommended setting.*

- PACKIT format

  Combine multiple file enclosures in a compressed PACKIT format. Only one enclosure is sent. The encoding method specified in “Encoding” on page 64 will be applied before the message is sent.

Compression methods

Unless you have version 3.0 or later (3.5 or later recommended) of the StuffIt Engine™ in the Extensions folder within the System Folder, you cannot select a compression method. If you do have the StuffIt Engine installed, you can select StuffIt™ compression. The smtp.daemon will then create a single archive and compress all outbound file enclosures in that archive. The daemon then creates a resource item that stamps the archive as one created by a Mail*Link gateway.

*The smtp.daemon will expand only StuffIt archives that are stamped with the appropriate resource item (that are known to be created by another Mail*Link gateway).*

Most Macintosh mail systems have limits on the number of file enclosures and the enclosure of hierarchical folders, which could be violated by expanding a StuffIt archive. This stamping of the archive before it is transmitted informs the gateway on the receiving end that the enclosure

will not violate the mail system's limits and can safely be expanded before delivery.

While the smtp.daemon is creating a StuffIt archive for outbound file enclosures, it does not yield processing cycles to other receive/send threads. For sites with heavy traffic, compressing enclosures can cause performance degradation and is therefore not recommended.

Encoding

- AppleSingle—UUENCODE

  Add the Finder information into the resource fork. Then, combine the resource and data forks into a single file and encode that file using UUENCODE. See the Acrobat file named "Tech Notes—Single Utility" for information about decoding files sent in this format on a Unix system. *This is a useful encoding method for sending Macintosh-specific files when you are not sure if the recipient system is a Macintosh.*

- Binhex 4.0

  Encode the file using the BINHEX method. This is the most widely available and widely used encoding method for Macintosh files. *This is the recommended method for sending Macintosh-specific or application files to Macintosh recipients.*

- Datafork Only—UUENCODE

  If the enclosure has a resource fork, the gateway discards it and then encodes the data fork by using the UUENCODE method. *This method is recommended for encoding files sent to Unix systems and PCs that don't support MIME.*

- MacBinary—UUENCODE

  Preserve both the resource and data forks of a binary file and encode it using UUENCODE. *This method is recommended for PC networks running Microsoft® Mail.*

- AppleSingle—MIME

  Add the Finder information into the resource fork. Then, combine the resource and data forks into a single file and encode the file in base 64. Non-Macintosh recipients will be unable to read the file, and audio or graphic elements may not be usable. If you use the recommended AppleDouble-MIME and the recipient tells you he couldn't read the file, try this option.

- AppleDouble—MIME

  Preserve both the resource and data forks as separate file components and encode them in base 64. *This is the accepted industry standard for transmission of Macintosh files via MIME and is the recommended option for recipients that support MIME.*

- Datafork Only—MIME

  Drop the resource fork of the file and then encode the remaining data fork in base 64. Audio or graphics, such as those in GIF format, are part of the data fork and are not lost, but may not be usable. If the recipient system or gateway cannot decode AppleDouble format, you can select this option.

Outgoing body translations

The Macintosh character set includes many special characters such as • or , which require a full 8 bits to be represented. If a system that uses the eighth bit for another purpose receives a message that contains these characters, it displays them as garbage characters. To avoid this problem when communicating with non-Macintosh recipients, the gateway translates these 8-bit characters in the message body according to the option you select in the Body Translations menu.

If you select a body translation method that uses MIME, RFC header encoding will also occur. (If the Subject line contains 8-bit characters, it will be encoded in Quoted-Printable ISO-8859-1—MIME.)

- None

  Do not perform any translations on the body text. *If you select this option, the receiving system and all intermediary transport systems must be completely 8-bit clean.*

- Quoted-Printable—MIME

  Use the MIME quoted-printable format that allows 8-bit characters and inserts line breaks every 78 characters. For incoming messages, decode from MIME. See "MIME mappings" on page 73 for information about the quoted-printable format.

- Quoted-Printable ISO-8859-1—MIME

  Convert the characters in the message to ISO-8859-1 before converting into quoted-printable format. For incoming messages, decode from MIME and from the ISO-8859-1 character set to Macintosh characters. See Appendix A for the translation tables. See "MIME mappings" on page 73 for information about the quoted-printable format. *This is the recommended translation method for recipients that support MIME*

- ISO-8859-1—MIME

  Convert the characters in the message to ISO-8859-1 before processing them as is (7-bit or 8-bit). For incoming messages, decode from the ISO-8859-1 character set to Macintosh characters . See Appendix A for the translation tables. See "MIME mappings" on page 73 for related information.

- RFC 822->987 USA

  Translate illegal characters in addresses and body text as required by RFC 822. *This is the recommended setting for older recipient systems.*

- Transparent 8-bit

  Leave the message body alone except for control characters other than tab, newline, and carriage return. *If you select this option, the receiving system and all intermediary transport systems must be completely 8-bit clean.*

- ISO-8859-1

  Convert Macintosh characters to the ISO-8859-1 character set (see “MIME mappings” on page 73). See Appendix A for the translation tables.*If you select this option, the receiving system and all intermediary transport systems must be completely 8-bit clean.*

- 2 way ISO-8859-1

  Convert Macintosh characters to the ISO-8859-1 character set in outbound messages and from ISO-8859-1 to Macintosh characters in inbound messages (see “MIME mappings” on page 73). See Appendix A for the translation tables. *If you select this option, the receiving system and all intermediary transport systems must be completely 8-bit clean.*

The 2 way ISO-8859-1 option operates on incoming messages only if the FROM address is included in the destination database and this characteristic is set for the address.

PC mappings

Click the PC Mappings icon to open the window shown in Figure 31.

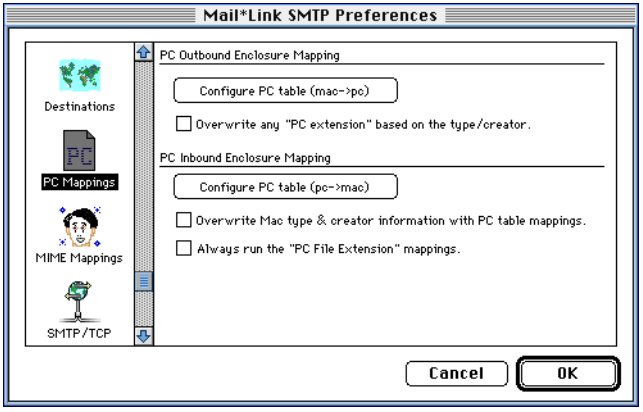

Figure 31 PC Mappings window

In the PC Mappings window, you can set check boxes that affect the PC extension mappings the smtp.daemon performs for addresses found in its destination database that have the "File Type to PC Extension" translation method set.

The last checkbox in this window, "Always run the PC File Extension mappings", instructs the smtp.daemon to bypass the destination database and apply these mappings to *all inbound* file enclosures.

Unless you check the global option to always run the PC file extension mappings, PC mappings are applied to inbound enclosures only if the FROM address is included in the destination database and the "File Type to PC Extension" translation method is set for the address.

See "PC outbound enclosure mapping" on page 68 and "PC inbound enclosure mapping" on page 71 for details.

About Macintosh type and creator

Most Macintosh files contain information used by the Finder, such as the name of the application that created the file (CREATOR) and the type of file (TYPE). For example, a file created in Microsoft® Word on a Macintosh has a CREATOR field of MSWD, which tells the Finder to run Microsoft Word when a user opens the file.

Some Macintosh files are plain text, such as any file saved as Text Only. These files have a TYPE of TEXT. Other Macintosh files are binary files, which might be an application or another type of Macintosh-specific file. In addition to Finder information, these files may contain data that can be shared with other types of systems (the data fork) and Macintosh resource information (the resource fork). These files have a TYPE other than TEXT; for example, if a Word file contains binary formatting information, a TYPE field of WDBN informs the Word application to display formatted text.

PC outbound enclosure mapping

When the smtp.daemon receives outbound mail, it looks for the recipient address in its destination database. If it finds a matching entry in the database and the associated method specifies the "File Type to PC

Extension" file translation method, it reads its mapping tables and applies the first type/creator match it finds. For example, if the enclosure is an Excel document (type TEXT and creator XCEL), it uses the PC filename extension ".SLK". If necessary, the smtp.daemon truncates the filename to 8 characters before appending the 3-characters extension.

In some cases, a Macintosh filename may already contain a period followed by one to three characters, which simulates a PC filename extension. To handle that case, check the following global option:

- Overwrite any PC extension based on the type/creator

  If the smtp.daemon receives an outbound Macintosh file enclosure whose filename contains a period followed by one to three characters, it assumes that the filename already contains a PC filename extension and does not apply a mapping. If the "Overwrite" option is checked, the smtp.daemon ignores the Macintosh "extension" and performs the filename mapping using the Macintosh type and creator information instead.

  For example, if the smtp.daemon receives an outbound Excel-3 file named "fact.org" and the global option is checked for outbound enclosures, the smtp.daemon renames the file "fact_org.xlc".

The smtp.daemon uses the following rules for renaming files:

- Change all periods and spaces to underscores
- Truncate the name to 8 characters
- Add the PC extension as found in the table

To see the PC extension mappings as they are shipped from the factory, click "Configure PC Table mac-pc" at the top of the PC Mappings window. The Mac-to-PC mapping configuration window opens (Figure 32).

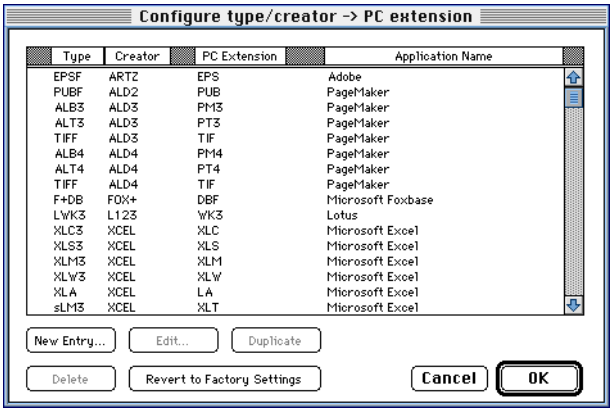

Figure 32 PC Table for outbound enclosures

The order of this list is significant in that the gateway always uses the first match of a type and creator. So, you should only have one entry with the same type/creator. In this window, you can:

- Add a new extension mapping
- Change an existing one
- Duplicate an extension mapping (to modify the copy)
- Delete a mapping
- Sort the list (by clicking a field in the title bar)
- Copy and paste list items (by using Command-c and Command-v)
- Revert to factory settings

Reverting to factory settings removes all changes made to the list.

For example, to add a new entry:

1 Click New Entry.

This window shown in Figure 33 opens.

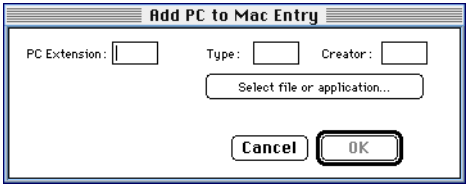

Figure 33 Creating a new extension mapping

2 Enter the PC filename extension in the first text field.

3 Type the Macintosh type and creator in the next text fields.

If you can't remember the type and creator information associated with a particular kind of file, click "Select file or application." A file dialog opens in which you can locate and select any file or application. When you click Select, the appropriate type and creator information is filled into the entry dialog (Figure 33).

4 Click OK.

To sort the list on a particular field, click the field name in the title bar of the list. For example, to sort by PC extension, click PC Extension. .

PC inbound enclosure mapping

When the smtp.daemon receives inbound mail, it looks for the FROM address in its destination database. If it finds a matching entry in the database and the "File Type to PC Extension" file translation method is set for that address, it reads its mapping tables and applies the first extension match it finds. For example, if the enclosure has the PC filename extension ".SLK", the daemon assigns the Macintosh type TEXT and creator XCEL.

In some cases, an inbound enclosure may already contain Macintosh type and creator fields; for example, if the file is encoded in AppleDouble format. Because the smtp.daemon decodes the enclosure *before* beginning a file-translation method (as described in "About the destination database" on page 51), the type and creator information may already be restored when the smtp.daemon examines the file for translation. To handle that case, check the following option:

- Overwrite Mac type/creator information with PC mappings

  If the smtp.daemon receives an inbound PC file enclosure that already contains Macintosh type and creator information, it does not apply a mapping. If this option is checked, the smtp.daemon ignores the type and creator information in the file and always uses the filename extension to assign type and creator information.

To bypass the requirement that the FROM address must be contained in the destination database (and the "File Type to PC Extension" translation characteristic must be set for that address) for mappings to occur, check this option:

- Always run PC table mappings

  If you check this option, the smtp.daemon runs PC filename extension mapping on *all inbound* enclosures, not just those from sites whose destination database entry specified "File Type to PC Extensions".

To see the mappings as they are shipped from the factory, click "Configure PC Table pc-mac" at the bottom of the PC Mappings window. The PC-to-Mac mapping configuration window opens (Figure 34).

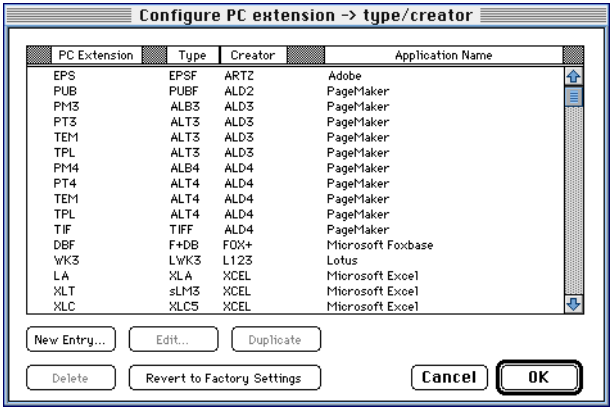

Figure 34 PC Table for inbound enclosures

In this window, you can:

- Add a new extension mapping

- Change an existing one
- Duplicate an extension mapping (to modify the copy)
- Delete a mapping
- Sort the list (by clicking a field in the title bar)
- Copy and paste list items (by using Command-c and Command-v)
- Revert to factory settings

Reverting to factory settings removes all changes made to the list.

For example, to add a new entry:

1. Click New Entry.

   A dialog box opens like the one shown in Figure 33 (page 71).

2. Enter the PC filename extension in the first text field.

3. Specify the Macintosh type and creator in the next text fields.

   If you can't remember the type and creator information associated with a particular kind of file, you can select the file or application by clicking "Select file or application." A file dialog opens in which you can locate and select any file or application. When you click Select, the appropriate type and creator information is filled into the entry dialog.

4. Click OK.

MIME mappings

Click the MIME Mappings icon to open the window shown in Figure 31

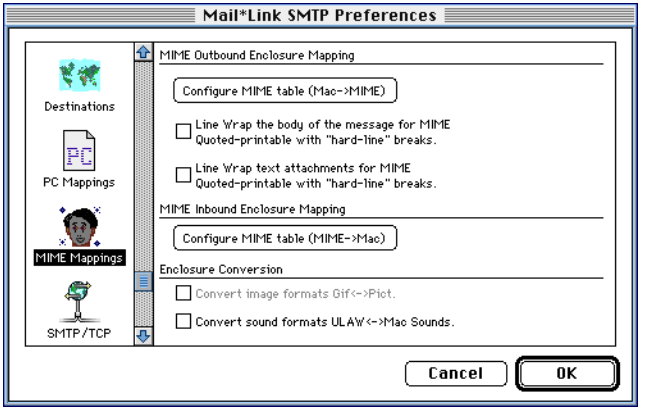

Figure 35 MIME Mappings window

The smtp.daemon MIME-encodes an outbound message if its recipient address is contained in the destination database and has MIME encoding methods specified. Inbound messages are MIME-decoded if they contain a MIME header. (Inbound MIME processing does not rely on the destination database.)

In the MIME Mappings window, you can set check boxes that affect how line-wrapping is performed for MIME-encoded messages. See “MIME mappings on outbound messages” on page 75 and “MIME mapping for inbound messages” on page 81.

The last two checkboxes in this window instruct the smtp.daemon to automatically convert PICT graphic files and Macintosh sounds. See “Enclosure conversion” on page 84 for details.

About MIME enclosure encoding

The MacMIME standard for enclosure encoding is implemented in the smtp.daemon. This standard is 100% compatible with the MIME standard, but allows more flexibility when dealing with incoming encoded MIME messages that contain Macintosh enclosures.

Many types of systems and gateways are supporting MIME encoding as the new Internet standard. You can verify that a system supports MIME by checking whether the RFC header in a message from that system contains

the string MIME-Version:. This string is required in the RFC headers of messages that are MIME-encoded. See “Header placement in incoming mail” on page 34 for related information.

When incoming MIME messages contain multiple parts of type text, the smtp.daemon places only the first MIME text body part in the message body. Other text parts are left with the MIME header and the following Note is displayed:

```
****************** NOTE ******************
There may be important message content
contained in the following MIME Information.
******************************************
-----------------MIME Information follows ---------------
```

The Note shown immediately above is intended to alert the reader that more message content may be included with the MIME header.

If you select MIME for file enclosure handling and body text, and the receiving system or gateway doesn’t support MIME, the message body will still be readable for the most part. The recipient will see some unusual line breaks and translated characters in the message body. However, if a user encloses a large file that contains formatting information and graphics, the translations and encoding that occur for MIME will make the enclosure difficult or impossible to use. If the recipient notifies a user that a file was received but was unusable, you can change the gateway configuration to allow the user to send it again.

See the “Glossary” on page 157 for MIME definitions.

MIME mappings on outbound messages

When the smtp.daemon receives outbound mail, it looks for the recipient address in its destination database. If it finds a matching entry in the database and MIME processing is specified, it MIME encodes the message and its enclosures. For Macintosh files, it reads its MIME tables and assigns MIME content-type and subtype fields based on the file’s Macintosh type and creator information. It uses the first match it finds for the type and creator information. For example, if the file enclosure is of type JPEG created by any application, the smtp.daemon assigns the MIME content-type “image” and the subtype “jpeg.”

In addition to content-type and subtype information, if Quoted-Printable MIME is used, the encoding process inserts “soft” line wraps so that each line is less than 76 characters. If the soft breaks are not removed at the receiving end (if the receiving end is not fully MIME compliant), the soft breaks appear as equal-signs in the message text. To handle this case, check one or both of the following options:

- Line-wrap the body of the message for MIME quoted-printable with “hard” line breaks.

  If you check this option, the smtp.daemon inserts “hard” line breaks when encoding for quoted-printable MIME.

- Line-wrap text attachments for MIME quoted-printable with “hard” line breaks.

  This option works just like the one described immediately above, but it applies to text attachments instead of the body text.

To see the Mac file-to-MIME encoding mappings as they are shipped from the factory, click the button labeled “Configure MIME Table mac-MIME” at the top of the MIME Mappings window.

The Mac-to-MIME mapping configuration window opens (Figure 36).

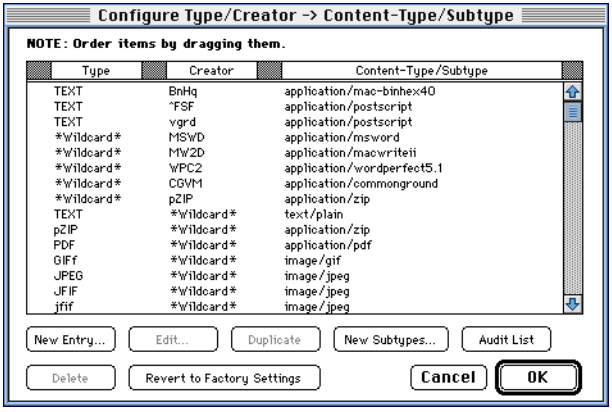

Figure 36 Mac type/creator to MIME Content-type/subtype mapping

The order of this list is significant because type and creator fields can be specified with wildcards. The ???? designator is a wild card that means "any."

In this window, you can:

- Add a new MIME mapping
- Change an existing one
- Duplicate an MIME mapping (to modify the copy)
- Delete a MIME mapping
- Define a new MIME subtype
- Audit the list order (to ensure that the list order is what you expect)
- Reorder the list (by dragging items)
- Copy and paste list items (by using Command-c and Command-v)
- Revert to factory settings

Reverting to factory settings removes all changes made to the list.

Adding a new MIME encode mapping

For example, to add a new entry:

1 Click New Entry.

This window shown in Figure 37 opens.

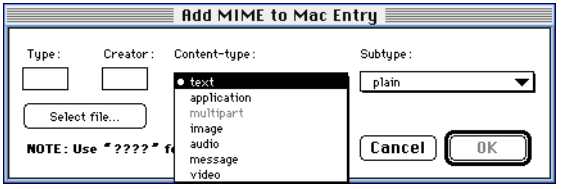

Figure 37 Creating a new Mac-to-MIME mapping

2 Specify the Macintosh type and creator in the text fields.

You can use the four-character string "????" to indicate "any" type or creator. If you can't remember the type and creator information associated with a particular kind of file, click "Select file." A file dialog opens in which you can locate and select any file or application. When you click Select in that dialog, the appropriate type and creator information is filled into the entry dialog.

3 Select the appropriate MIME type from the pop-up menu (Figure 37).

4 Select the appropriate MIME subtype from the second pop-up menu.

5 Click OK.

Auditing and reordering the list

After adding new MIME encodings, click Audit List to verify that you have not made existing entries obsolete. For example, if you specify a map that uses wildcards to indicate "for any Mac file type with the creator WPC2, map to CONTENT-TYPE application and the SUBTYPE wordperfect5.1", and that new map supersedes a more specific map later in the list, the

audit will highlight the later entry and inform you that the smtp.daemon will never match that entry.

If that is not what you intended, you can delete the new entry, or move it to a later position in the list. To move an entry, highlight it and drag it to a new position, as shown in Figure 38.

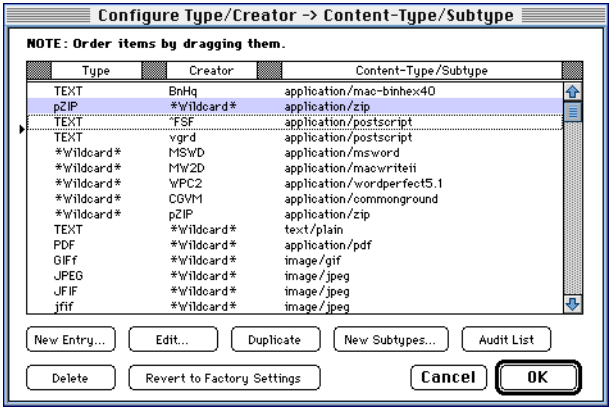

Figure 38 Reordering the list

Defining a new MIME subtype

If MIME does not include a subtype for a particular format that will be sent through the gateway, you can "flag" that format by defining a new MIME subtype. For example, if users need to exchange sounds (audio files) through the gateway, you can define a MIME subtype for AIFF and then create a new entry that uses that subtype.

To define a subtype and use it in a mapping entry:

1. Click New Subtypes below the Mac-to-MIME map list.
2. Click New in the next dialog, and then give the subtype a name.

   User-defined MIME subtypes should always start with "x-", as specified in RFC 1521. See Figure 40.

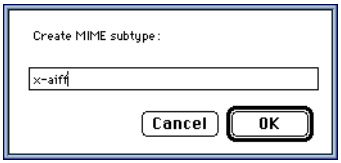

Figure 39 Creating a new MIME subtype

3 Click OK.

You'll see the new subtype listed in the Subtype Maintenance window. You can modify or delete your user-defined subtypes by selecting them in this window.

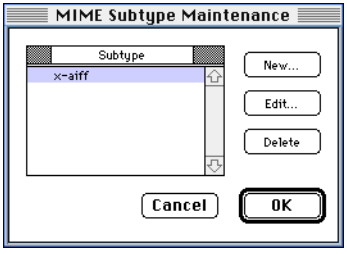

Figure 40 MIME subtype window

4 Click OK in the MIME subtype window.

5 Click New Entry below the Mac-to-MIME map list.

6 Fill in the type and creator fields; for example, click "Select file" and choose an audio file.

7 Select "audio" in the Content-type menu.

8 Choose "x-aiff" in the Subtype menu (Figure 41).

User-defined subtypes appear at the bottom of the menu list.

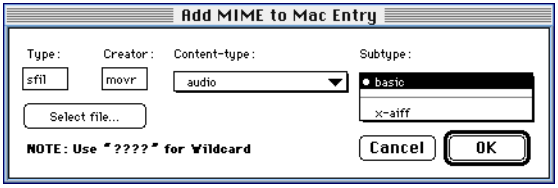

Figure 41 Creating an entry that uses the new subtype

When users send audio files of the specified type and creator, the MIME header of the outbound message will include the subtype "x-aiff."

For the receiving gateway to accurately decode the audio enclosure, it must also have a mapping that assigns the proper Macintosh type and creator to the "x-aiff" subtype.

MIME mapping for inbound messages

When the smtp.daemon receives inbound mail that contains a MIME header, it always MIME-decodes the message, whether or not the FROM address is in the destination database. As it is decoding the MIME, it attempts to reassign the Macintosh type and creator for all file enclosures. Its first attempt is based on the content of the MIME subtype field using the mappings shown in Figure 42. For example, if the incoming message has a MIME subtype of "msword," the decoded enclosure will be assigned the type "WDBN" and the creator "MSWD."

If there is no match on a MIME subtype field where the content type is "text", the smtp.daemon assigns the enclosure the type "text" and the creator SimpleText.

To see the MIME-to-Mac file decode mappings as they are shipped from the factory, click "Configure MIME Table MIME-mac" in the middle of the MIME Mappings window.

The MIME-to-MAC map configuration window opens (Figure 42).

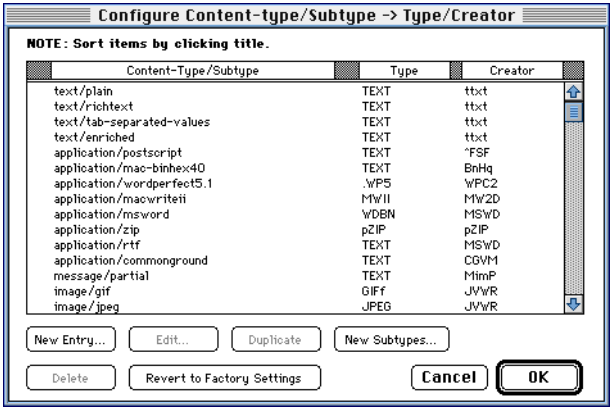

Figure 42 MIME Content-type/subtype mapping to Mac type/creator

As in the other map lists, the order is significant in that the smtp.daemon stops searching as soon as it finds a match.

In this window, you can:

- Add a new MIME decode mapping
- Change an existing one
- Duplicate a MIME decode mapping (to modify the copy)
- Delete a MIME decode mapping
- Define a new MIME subtype
- Sort the list
- Copy and paste list items (by using Command-c and Command-v)
- Revert to factory settings

Reverting to factory settings removes all changes made to the list.

Adding a new MIME decode mapping

For example, to add a new entry:

1. Click New Entry.

This window shown in Figure 43 opens.

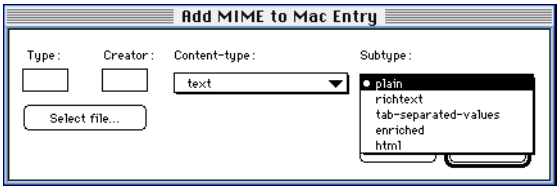

Figure 43 Creating a new MIME-to-Mac decode mapping

2 Specify the Macintosh type and creator in the text fields.

If you can't remember the type and creator information associated with a particular kind of file, you can select the file or application by clicking "Select file." A file dialog opens in which you can locate and select any file or application. When you click Select in that dialog, the appropriate type and creator information is filled into this dialog.

3 Select the appropriate MIME type from the pop-up menu (Figure 37).

4 Select the appropriate MIME subtype from the second pop-up menu.

5 Click OK.

New MIME subtypes in the MIME-to-Mac map

The process of defining a new MIME subtype in the MIME-to-Mac mapping window is the same as described earlier for outbound enclosures (see "Defining a new MIME subtype" on page 79). However, the subtype mappings serve the opposite purpose here. User-defined MIME subtypes in this list are used to decode the user-defined MIME subtypes used in the encoding process at a remote site.

For example, to correctly decode inbound enclosures that have been assigned the new "x-aiff" subtype described earlier, you add a mapping for incoming enclosures with the subtype "x-aiff."

Enclosure conversion

The two check boxes at the bottom of the MIME mapping panel enable the smtp.daemon to recognize graphic and sound file enclosures and convert them to a MIME standard format (outbound) or to Macintosh files (inbound).

- Convert graphic files Gif <–> PICT

  If checked, the smtp.daemon converts outbound PICT graphics to GIF format and inbound GIF files to PICT format.

- Convert sound formats ULAW <–> Mac sounds

  If checked, the smtp.daemon converts outbound Mac sound files to ULAW format and inbound ULAW files to Mac sound format.

5

Administration

This chapter describes the following aspects of gateway administration:

- Authorization number maintenance
- Working with the registered users database
- Setting up mail forwarding
- Working with messages in the queue

Authorization numbers

The number of local QuickMail users authorized to use the gateway is encoded in one or more authorization numbers. To see how many local users are authorized to use the gateway:

1. Choose Authorization in the Windows menu.

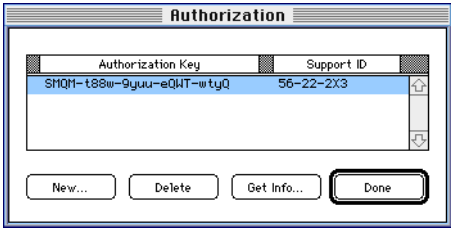

Figure 44 Authorization window

2. Select an authorization number and click Get Info.

   You'll see the authorization number, support ID, number of authorized users, and expiration date (if any).

To add more users, you must purchase an additional authorization number (contact our Support or Sales Department.) To add a new authorization number once you have received it,

1. Choose Authorization in the Windows menu.
2. Click New.
3. Enter the authorization number in the dialog that opens.
4. Click OK.

To delete an authorization number, highlight it and click Delete. Invalid authorization numbers are italicized.

Modifying the registered users database

To open the registered users database, open the Preferences dialog and click the Users icon. Then, click the Database button.

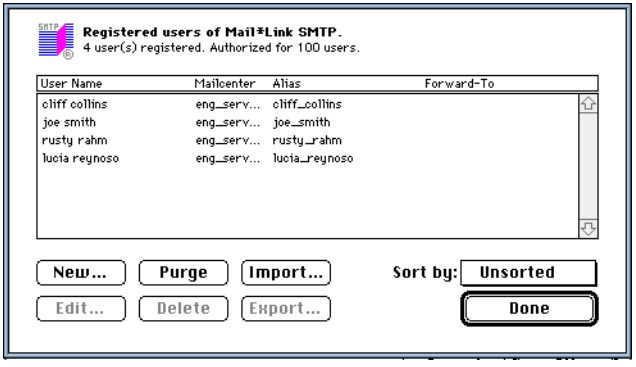

Figure 45 Registered users database

The fields in each user record include the following data:

- User Name —A QuickMail login name
- Mailcenter—The name of the user's MailCenter
- Alias—An RFC 822-legal alias
- Forward-to —An optional forwarding address, see "Using mail forwarding" on page 92

Internal address representation

The alias assigned to a user provides a convenient, recognizable name that enables you to avoid the internal address representation that is actually used by the smtp.daemon.

In some situations, however, administrators need to understand the internal address representation, either to interpret addresses or to specify a Forward-to address to a local QuickMail user who is not registered in the database (who therefore does not have a convenient alias). The term "fully qualified QuickMail address" on page 96 refers to a QuickMail address specified in the internal address format.

How outbound addresses are represented

When the smtp.daemon receives a QuickMail FROM address in outbound mail, it *always* uses the built-in translation table shown in Table 3 to convert the address into its internal address representation.

Table 3 Built-in translation table

INPUT CHARACTER	INTERNAL REPRESENTATION
" double quote	""
_ underscore	#u#
(left parenthesis	#l#
) right parenthesis	#r#
, comma	#m#
: colon	#c#
\ backslash	#b#
# hash-sign	#h#
. period	#d#
space or non-breaking space	_
characters < space or > tilde (8th-bit on)	#*ddd*#

For example, suppose this is the QuickMail FROM address:

```
Joe E. Smith, Jr.@ABC1
```

(ABC1 is the MailCenter name.) If the "Use Mailcenter in reply address" option is unchecked (see "Reply address options" on page 33), the internal address is truncated after the user name, so the address would be encoded as follows:

```
joe_e#d#_smith#m#_jr#d#
```

If the "Use alias as reply address" option is unchecked (see "Reply address options" on page 33), this internal representation is used directly as the reply address sent in the RFC header.

If the "space replacement character" option has been set to a period (see "Change space to" on page 44), the smtp.daemon changes the default underscore to a period before using it as the reply address, which would result in the following representation:

```
joe.e#d#.smith#m#.jr#d#
```

If the "Use Mailcenter in reply address" option is checked (see "Reply address options" on page 33), the internal address includes the MailCenter name in this format:

encoded-name.encoded-mailcenter

which would result in the following internal format:

```
joe.e#d#.smith#m#.jr#d#.ABC1
```

How incoming addresses are validated

The built-in translation table (Table 3 on page 87) is used in reverse to decode an incoming QuickMail address. First, the smtp.daemon scans from the end of the name backwards. If there is no period character in the address, everything is assumed to be a user name. If the smtp.daemon finds a period character, it interprets characters to the right of the period as a MailCenter name and those to the left of the period as a user name in this format:

encoded-name.encoded-mailcenter

It then performs the character translations and validates the resulting address with QuickMail in this format:

First Last@MailCenter

If the validation fails, the period character is re-evaluated as a space replacement character instead and a second validation is attempted with the at-sign removed and the entire string interpreted as the user name.

Adding a user record

You can add a list of registered users by importing a text file or you can register each user explicitly by creating one record for each user. To add a user record to the database:

1. Click the New button at the bottom of the registered users list.

   A dialog box opens:

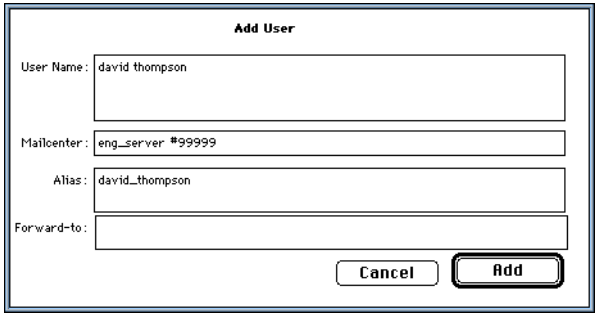

Figure 46 Adding a new user record to the database

2. Type the user's QuickMail name in the first text field.
3. In the second text field, type the name of the user's MailCenter.
4. In the Alias field, enter a legal RFC 822 alias that has no spaces or other illegal characters.

   Illegal characters are defined in "Alias generation options" on page 42. If you enter an illegal character in the Alias field, the smtp.daemon will notify you when you click OK.
5. Click OK.

Editing a user record

To edit a user record, double-click the User Name field in the registered users list, or select the record and click the Edit button. A dialog opens that's almost identical to the Add User dialog, except that the fields are filled in. You can make the appropriate changes to the text fields and then click OK.

Sorting the user list

Users are listed in the order in an internal "hashed" order unless you click the Sort pop-up menu and choose a field on which to sort the list. You can sort on the "Name," "Mailcenter," "Alias," or "Forward-to" field. Clicking the Purge button below the user list undoes the sort order.

Sorting large lists can be time consuming, and can increase the amount of time it takes to add or delete a user from the database.

Deleting a user record

To remove a registered user, select the user's name by clicking on it in the list (or Shift-click to select more than one name), and click the Delete button.

Importing and exporting text files

If you need to work with a list of users and prefer to work in a text editor, you can export and import the registered users database to and from text files.

To export the registered users database to a text file, press Command-a to select all users or Shift-click to select certain users, and then click the Export button. In the file dialog that opens, specify a file name and click

Save. To export selected user, select those users before clicking the Export button.

*When you export the list of users to a file and then modify the list and re-import it, make sure that you delete existing entries before importing the modified list back into the database. Modified entries will be read as new entries, which can easily cause Mail*Link to reach the maximum number of allowable users.*

To import a list of registered users, the entry for each user in the text file must be in this format:

```
User Name:Mailcenter:Alias[:Forward-to address]
```

Each entry must be on a separate line, and the colon character (**:**) must be used to separate the fields in each entry. The brackets shown around the fourth field indicate that the field is optional—they are not part of the syntax.

The fields in each entry must contain the following information:

- First field—a QuickMail login name
- Second field—The name of the MailCenter the user logs into
- Third field—An RFC 822-legal alias
- Forward-to—A forwarding address (optional)

  The fourth field is optional. It is used only when you are setting up mail forwarding. If it is present, it must contain an address at which this user receives mail—see “Using mail forwarding” on page 92.

For example, create a file that looks something like this:

```
Diane Schultz:SUPPORT:diane
Sonia Yip:ADMIN:sonia
Larry Urquhart:SUPPORT:larry
Cliff Collins:ENGINEERING:cliff
User 1:Mailcenter1:editor:chris@abc.com
```

You must save the file as plain text.

To import the text file, open the user list by clicking the Database button in the Preferences dialog. Then, click Import.

In the Import Users dialog, click the button labeled “Read in data file”. A file dialog opens, in which you locate and select the text file. When you click Open in the file dialog, the contents of the text file are listed in the Import Users dialog.

If an entry is missing one of the three required fields, double-click that entry to add the missing information. An entry cannot be added to the registered users database unless all required information is present.

Press Command-a to select the names (or select only those names you want), and then click Insert into Database. If you try to add an entry that already exists in the database, an alert will be displayed. Click Done to return to the user list, where the new list of users will be displayed.

Using mail forwarding

You can use the Forward-to field in a user record in the following ways:

- To forward a user’s mail to another address
- To set up multiple incoming aliases for a user

The forwarding address must always be a legal RFC 822 alias or address. At this release, you cannot forward to a list of multiple addresses.

How mail forwarding works

When the smtp.daemon receives an inbound mail message addressed to a QuickMail user, it first checks the alias field of the registered users database for that user. If it finds a record for the user, it checks the Forward-to field of that record, and if it finds an address there, it then looks for a hostname.

If there is a hostname other than the gateway’s own hostname (from the My Hostname field in the Preferences dialog), the address is assumed to belong to an SMTP mail system and the mail message is immediately forwarded back out through the gateway. The smtp.daemon changes the recipient address and writes a message to the log file. See “Forwarding to an external Internet address,” below for an example.

If there is no hostname in the Forward-to field, or if the hostname exactly matches the gateway's own hostname, the address is assumed to be that of a local QuickMail user. See "Forwarding to a local QuickMail address" on page 94 for details.

Only one level of alias substitution is performed in a forwarding address. This single-level dereferencing avoids endless loops, where messages are forwarded through two or more addresses leading back to the same recipient.

Forwarding to an external Internet address

For example, suppose a QuickMail user named "Joe Smith" has the reply address "joe@abc.com". He is temporarily working at the University of California, Berkeley instead of his usual address.

You can forward his mail by opening his record in the database and typing "joe@berkeley.edu" in the Forward-to field. All incoming mail addressed to joe@abc.com will be sent back through the gateway to joe@berkeley.edu. The user record for this example is shown in Figure 47.

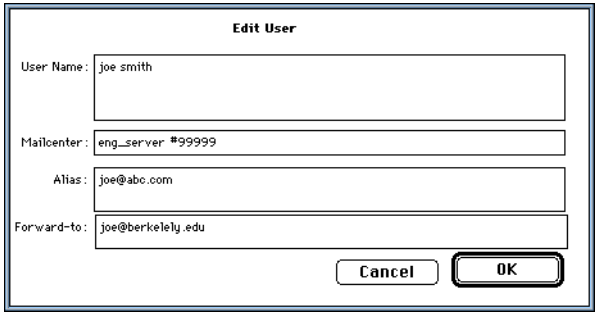

Figure 47 Forwarding mail to an external Internet address

To be forwarded to an SMTP mail system, the Forward-to address must be a legal RFC 822 Internet address, and the hostname must be different from the gateway's hostname.

Forwarding to a local QuickMail address

To forward incoming SMTP messages to a local QuickMail user, the address in the Forward-to field must contain one of the following address formats:

- another alias contained in the user database (see "Forwarding to another alias" next)
- a fully qualified QuickMail user's address specified in the internal format used by the smtp.daemon (see "Forwarding to a fully qualified QuickMail address" on page 96)

The Forward-to address must always be in legal RFC 822 format. If the QuickMail user is a registered user, the easiest way to specify a legal address is to use his or her alias. However, you can always specify a full QuickMail address in the internal address format, whether the user is a registered user or not.

Forwarding to another alias

Suppose a QuickMail user named "Barney Rubble" is on vacation and wants his mail forwarded to another QuickMail user, "Fred Flintstone." In this example, both Fred and Barney are registered users (Figure 48).

You can forward Barney's incoming SMTP mail by opening his record in the database and typing Fred's alias in the Forward-to field. When incoming mail addressed to Barney is received, it will forwarded to Fred. The user records for this example are shown in Figure 48.

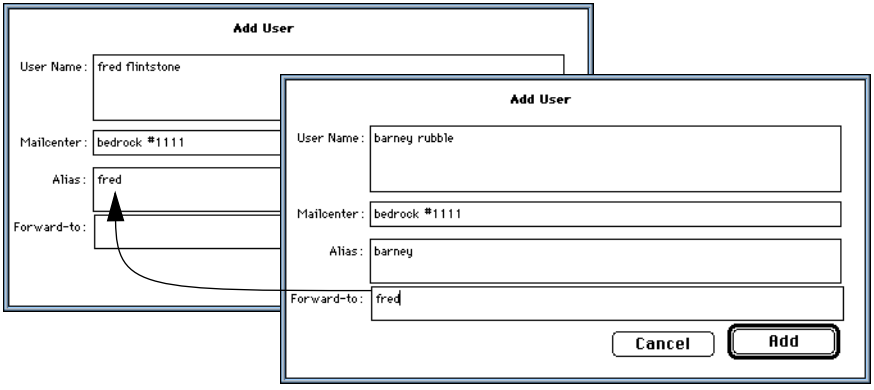

Figure 48 Forwarding to another registered user's alias

Only one level of alias substitution is performed in a forwarding address. So, if Fred's record specifies another forwarding address, the second forwarding address is not used. The mail would be sent to Fred.

In this example, the Forward-to address is another alias in the database.So, given the gateway hostname "smtpgw.abc.com," these are valid Forward-to addresses when forwarding to the alias in this example:

```
Forward-to: fred
Forward-to: fred@smtpgw.abc.com
```

If the alias field contains a hostname other than the gateway's hostname, do not include the hostname in the Forward-to field. Just use the user ID portion of the alias. For example, if Fred's alias field contains "fred@abc.com", you can specify his alias by entering "fred" in the Forward-to field of Barney's user record.

Forwarding to a fully qualified QuickMail address

In this example, a registered user named “Barney Rubble” is on vacation and wants his mail forwarded to another QuickMail user, “Fred Flintstone,” who is *not* a registered Mail*Link SMTP user.

In the case where no alias is available for the Forward-to addressee, you must specify the QuickMail address in the address format described in “Internal address representation” on page 87.

An example user record is shown in Figure 49:

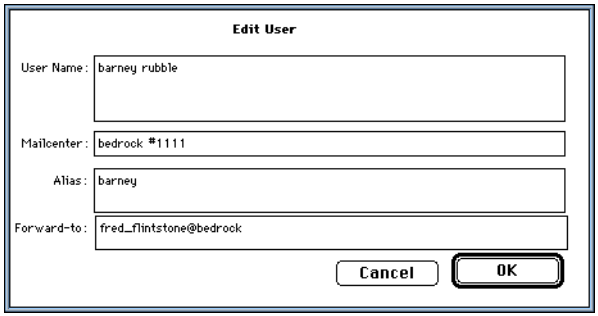

Figure 49 Forwarding to a full QuickMail address

If you need to specify a full QuickMail address for a user who is not already registered in the database (a user who does not have an alias), you must use the internal address format understood by the smtp.daemon (see “Internal address representation” on page 87). All illegal characters are replaced and the QuickMail address is specified in this format:

First_Last.MailCenter

For example,

```
fred_flintstone.bedrock
```

So, given the gateway hostname “smtpgw.abc.com,” these are valid Forward-to addresses for the QuickMail address in this example:

```
Forward-to: fred_flintstone.bedrock
Forward-to: fred_flintstone.bedrock@smtpgw.abc.com
```

Setting up multiple incoming aliases for one user

You can configure multiple incoming aliases for a user by using multiple user records. For example, suppose a QuickMail user named “David Livingstone” wants to receive both his own mail and mail addressed to “editor” in his own QuickMail account.

To enable the gateway to redirect mail received under the alias “editor” to the user’s regular QuickMail address, create a new record by clicking the New button in the user list window.

Then, specify a User Name/MailCenter Name combination that is unique in the registered users database. For example, type “User Name1” in the User Name field and “BogusMC” in the Mailcenter field.

In the Alias field, enter the second alias, “editor,” and in the Forward-to field, type the user’s address. For example, to send mail addressed to the “editor” to the user’s QuickMail account, type the alias “david_livingstone,” as shown in Figure 50.

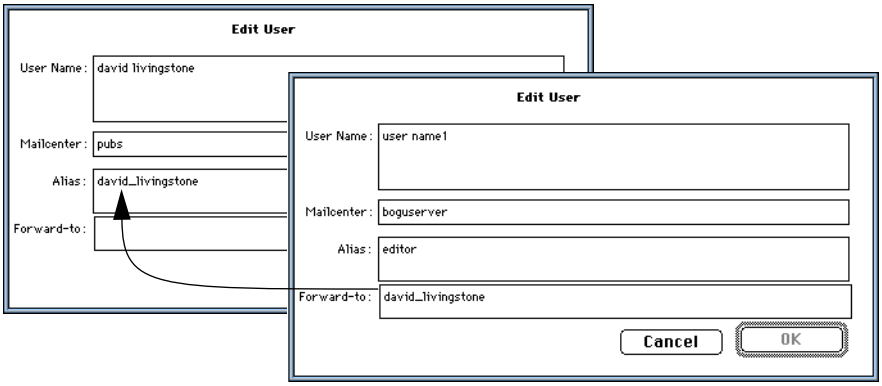

Figure 50 A second incoming alias

The fields in Figure 50 contain the following information:

- User Name and Mailcenter fields

  The User Name/MailCenter Name combination must be unique within the registered users database.

  For example, you might choose one MailCenter name to use when setting up multiple incoming aliases, such as “BogusMC.” You can

then specify a unique user name in each record that represents an additional incoming alias, such as “Unique User1”, “Unique User2”, and so forth. You can use any combination of these two fields, as long as the combination is unique in the database.

- Alias

  The alias field contains a valid alias, such as “editor”.

- Forward-to

  The Forward-to address contains the user’s alias in his or her original user record. All incoming mail addressed to the alias “editor” will be forwarded to the alias you specify.

Working with queued messages

The gateway stores messages in a spool folder within the Mail*Link SMTP/QM folder. The files in that queue are in a format understood by the gateway. You can work with the messages, view their status, modify destination addresses, and return mail to the sender, by opening the queue within the smtp.daemon.

Opening the queue

You can view queued messages in either of these ways:

- Choose Check Mail in the smtp.daemon Administration menu

  If there are no messages in the queue, an alert is displayed.

- Choose Preferences in the smtp.daemon Windows menu and then click the Display button

  If there are no messages in the queue, the Display button is dimmed; otherwise, the number of queued messages is shown.

When the queue contains messages, either action opens a window like Figure 51.

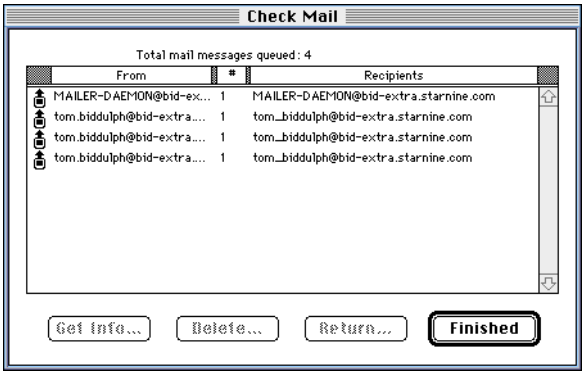

Figure 51 The smtp.daemon mail queue

Each message occupies one line in the queue window. The number of recipients of each message is shown in the "#" column followed by a comma-separated list of the recipients. The symbols that can precede a message have the meanings shown in the list immediately below.

- A downward pointing arrow indicates an incoming message (from an SMTP mail system) awaiting delivery to QuickMail.
- An "X" through a downward pointing arrow indicates a problem on the previous attempt to deliver this incoming message.
- An upward pointing arrow indicates an outbound message (from QuickMail) awaiting delivery to SMTP.
- An "X" through an upward pointing arrow indicates delivery problem on the previous attempt to send this outbound message.

The Finished button closes the queue window. The other three buttons in this dialog are described in the next sections.

Viewing and changing information about messages

To open a window that contains additional information about a message, click to select a message or Shift-click to select more than one, and then click Get Info.

An information window is displayed like the one in Figure 52.

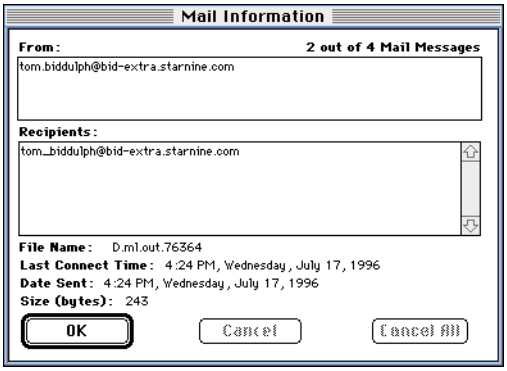

Figure 52 Mail Information window

The Mail Information window shows the recipient addresses and detailed information about the file, including the name of the file, the last time a TCP/IP connection was established, the date the message was sent, and the number of bytes in the message.

Changing a recipient's address

To edit a recipient address, double click on the address in the Mail Information window to open the dialog shown in Figure 53.

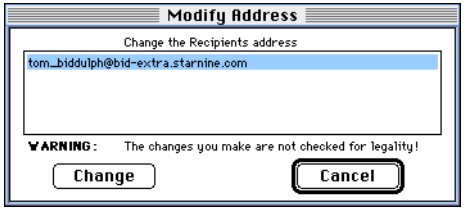

Figure 53 Changing a recipient address

To change the recipient address, delete the existing address and enter a new one. Then, click Change to save your changes and return to the previous window, or click Cancel to close the window without making any changes.

Changes made to a recipient's address are not checked for legality. Be careful! Make sure you are changing the address to a legal address.

Viewing information about multiple messages

To open information windows about multiple messages, press Command-a to select all messages or Shift-click to select certain messages and then click Get Info.

If you do not make any changes in the message, clicking the OK button closes the window. If you do make a change, clicking the OK button displays information about the next message in the queue.After you make a change in a message, the Cancel All button becomes enabled. To stop cycling through multiple messages and close the window, click Cancel All.

Deleting messages from the queue

To delete messages from the mail queue, click to select a message or Shift-click to select more than one, and then click Delete. You will be asked to confirm that you want to delete each message. To avoid these repeated alerts when deleting more than one message, press the Option key when you click Delete.

Returning messages to the sender

To return messages to the sender, click to select a message or Shift-click to select more than one, and then click Return. You will be asked to confirm that you want to return each message. To avoid these repeated alerts when returning more than one message, press the Option key when you click Return.

Mail from the mailer-daemon

Messages from the mailer-daemon in the queue do not necessarily indicate a problem. In many cases, these messages are part of the normal functioning of the gateway. For example,

- If you return a message to its sender by clicking Return in the Display window, the gateway records the FROM address as mailer-daemon and a message appears in the queue.
- If the gateway could not deliver the mail after the specified number of tries, it returns a message to the sender saying that the mail could not be delivered. This message is shown in the queue as a message from mailer-daemon.
- If a user is changing his or her alias, the gateway returns the result to the user in a mail message from mailer-daemon.

6

Troubleshooting

This chapter describes how to use check gateway operations and interpret information in the Mail*Link SMTP log file. It also explains how to use threads information to debug SMTP transactions.

For a list of some common error and status messages as well as the standard Macintosh, AppleTalk, and TCP error codes, see “Error Messages and Codes” on page 128.

Checking gateway configuration and statistics

To get a report from the smtp.daemon about its configuration, the e-mail traffic it is handling, and other statistics, send a mail message addressed to “maillink”. The smtp.daemon generates a return message like this:

```
-------------- Special condition follows --------------
Configuration Information and Statistics follow.
-------------- Message follows --------------
=== Configuration information for "Mail*Link® SMTP 4.0.0" ===
Admin folder is: mac hd:Mail*Link SMTP/QM:ADMIN:
Spool folder is: mac hd:Mail*Link SMTP/QM:Message Spool/SMTP:

--------------- General
0 message(s) queued.
Retry queued mail after 30 minutes.
Return queued mail after 7 days.
Logging Level set to Plus Debug Messages.
Mail Log every 1 day(s) at 12:01 AM.

--------------- Naming Hosts
My Hostname is smtpgw.abc.com.
Send all mail to default host is enabled.
My Default Host is sparky.abc.com.
Require domain name is disabled.
```

```
--------------- Users
Administrator's address is Tom Biddulph@ABC1 on system
QuickMail.
Send 'Host Down' messages to Administrator is enabled.

--------------- Addressing
Auto-register users on outgoing mail is enabled.
Allow-user to change their alias is disabled.
Use alias as reply address is disabled.
Use Mailcenter in reply address is disabled.
Placing RFC header at End.

===== Global Statistics =====
Execution time = 0 days; 0 hours; 2 minutes.
5 mail message(s) sent.
3 mail message(s) received.
3 file(s) of type 'Sin ' queued.
1 file(s) of type 'Srec' queued.
```

Open Transport supports a smaller set of statistics than MacTCP. If the Macintosh is running MacTCP, you will see additional statistics.

Problems reported in the log file

The smtp.daemon writes status and error messages to a file named Mail*Link Log, which is located in the ADMIN folder within the Mail*Link SMTP/QM folder. It is a text file that can be opened by any application that can read text files, such as the TeachText application or almost any other word processing program. You can print the contents of the log file by printing from within the text editor application.

The smtp.daemon also displays approximately 100 lines of current messages in the smtp.daemon status window, which normally opens automatically when you launch the gateway application. (If you close the status window, the smtp.daemon remembers that it has been closed and does not open it automatically again until you have explicitly reopened the window.)

This window enables you to see log messages in “real time” as the gateway operates. You can close the window by clicking the close box,

and open a new one by choosing Log in the Windows menu. To print the contents of the status window, choose Print Log in the File menu.

Automatic log file clearing

By default, the log file is cleared daily and mailed to the administrator. You can always locate the latest information in the log file by looking at the time stamp that precedes every log message.

Generating protocol statistics in the log

To generate a brief statistics report of gateway operations in the log file and status window, choose “Display SMTP Stats” in the Status menu. The statistics look something like this:

```
10:47:30 AM [100]: +++++ Daemon statistics follow +++++
10:47:30 AM [100]: Execution time = 0 days; 0 hours; 28 minutes.
10:47:30 AM [100]: 2 mail messages sent.
10:47:30 AM [100]: 20 mail messages received.
```

If MacTCP is in use, TCP statistics are displayed as well. For example:

```
10:47:31 AM [100]: ===== TCP Overall Connection Stats =====
10:47:31 AM [100]: tcp connection attempts (outgoing): 2
10:47:31 AM [100]: tcp connections opened (outgoing): 2
10:47:31 AM [100]: tcp connections accepted (incoming): 20
10:47:31 AM [100]: tcp connections closed: 22
10:47:31 AM [100]: tcp connections aborted: 0
10:47:31 AM [100]: tcp data bytes received: 20363
10:47:31 AM [100]: tcp data bytes sent: 4794
10:47:31 AM [100]: tcp duplicate data bytes received: 0
10:47:31 AM [100]: tcp data bytes retransmitted: 0
10:47:31 AM [100]: tcp input packets: 268
10:47:31 AM [100]: tcp output packets: 384
10:47:31 AM [100]: tcp duplicate packets received: 0
10:47:31 AM [100]: tcp retransmitted packets: 0
10:47:31 AM [100]: ===== End of Stats =====
10:47:31 AM [100]: +++++ End of Statistics Report +++++
```

Generating more extensive log messages

You can change the level of information reported by the gateway by choosing Log Level in the Status menu, or by accessing the Log Level pop-up menu in the Preferences dialog.

Working with threads information

If the Macintosh is running System 7, the smtp.daemon can support concurrent processing by using separate threads to perform its message processing and SMTP operations. In a threaded environment, gateway operations are reported in the log file in terms of active processes managed by different threads. Threads information in the log file can be used to debug SMTP transactions and determine where the gateway is spending most of its time.

The Threads window

The smtp.daemon includes a Threads window, which shows the state of all threads. When the default number of sender and receiver threads are configured, the window looks like Figure 54.

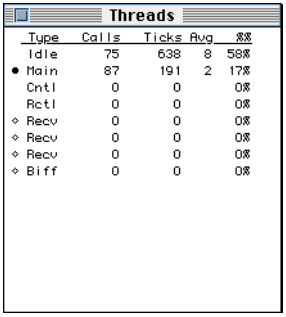

Figure 54 Dynamically updated Threads window

Send threads are displayed in the Threads window only as they are needed (up to the configured number).

If you configure a higher number of threads that could not be displayed in the standard Threads window, a wider, two-column window is displayed instead (Figure 55).

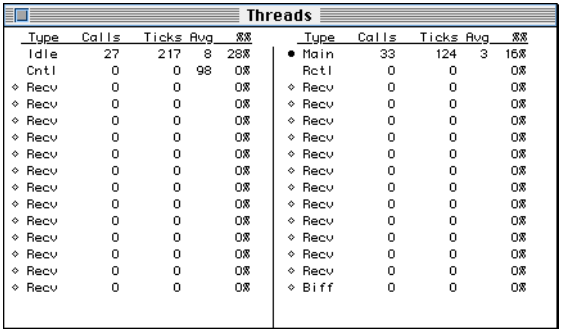

Figure 55 Wider Threads window

If a Threads window is not already open, choose Threads in the Windows menu.

The first column in the Threads window contains one of three characters, which indicates the state of the thread. A solid bullet character (•) indicates that the thread is active. A hollow diamond indicates that a thread waiting for an event to occur that will cause it to become active (this is the “listener” state of the receive threads). A space indicates that the thread is dead. A “dead” thread will be reactivated when there is an activity for it to perform. The rest of the columns in the Threads window are as follows:

- Type

  The Type column gives a four character short-hand name for the thread types, explained in “Thread types,” below. The first type is not really a thread but is an indication of the idle time of the smtp.daemon.

- Calls

  The Calls column shows the number of times the thread is activated.

- Ticks

The Ticks column shows the total number of ticks that thread has been active. (One tick is 1/60 of a second.)

- Average

  The “Avg” column indicates the average number of ticks that a thread uses on each activation.

- Percentage

  The “%%” column indicates the percent of the time spent in that thread (or overhead/idle).

Thread types

The smtp.daemon has a configurable number of threads, which you may define in the Preferences dialog. See Chapter 3 for details. The maximum number of send and receive threads is 25 of each, and there is always one Ctrl thread and one Main thread. When Open Transport is in use, there is always one Biff thread. So, the maximum number of threads that may be active in the smtp.daemon is 53. The following list describes the thread types.

- Main thread

  This thread is the “main event loop”. It is responsible for overhead activities, including the Preferences interface, key checking, and recognizing when it needs to activate the Control thread. The Main thread is always present and active, and is always assigned the thread ID number “100” in the log file. It is created when the gateway is launched.

- Control (Cntl) thread

  This thread is responsible for processing outgoing mail. On outgoing mail, it allocates “Send” threads (described below) to handle a mail message that is waiting to be sent. If all available send threads are busy, the control thread becomes a sender if there are files waiting to be sent.

  The Control thread is present and active only when there are outbound mail files that need to be processed. There is only one Control thread. Its thread ID number is assigned only for the current instantiation. When the Control thread stops active

processing, its ID number is released and the next ID number ready for assignment is incremented.

- Receive Control (Rctl)

  This thread type is responsible for processing incoming mail. Once all outgoing mail has been processed, the Receive Control thread checks to see if any mail has been received by the "Recv" threads. If so, it processes the inbound mail so that it can be passed to QuickMail for delivery.

  The Receive Control thread is present and active only when there are incoming mail files that need to be processed. There is only one Receive Control thread. Its thread ID number is assigned only for the current instantiation. When the Receive Control thread stops active processing, its ID number is released and the next ID number ready for assignment is incremented.

- Send

  This type of thread is responsible for performing the necessary outgoing translation on a mail message (as specified in the per-destination preferences) and then actually sending the mail to the appropriate system via the SMTP protocol. You can configure the number of send threads the smtp.daemon will spawn, as described in Chapter 3.

  Send threads are present and active only when there are outgoing mail files that are to be processed and sent. Send threads are assigned an ID number only for the current instantiation. When that thread stops active processing, its ID number is released and the next ID number ready for assignment is incremented.

- Receiver/Listener

  These threads "listen" for an incoming connection request on socket 25 (the SMTP connection socket). You can configure the number of receive threads the smtp.daemon will spawn, as described in Chapter 3.

  When a connection request is received, these threads undertake the SMTP protocol that is necessary to receive one (or more) mail messages from the initiating host. The actual processing of a received message is done by the Control thread, described above.

Receive threads are always present. They are assigned a thread ID number beginning with 101.

- Biff

  This is a listener thread that receives all incoming connection requests under Open Transport. It passes off a connection request to one of the receive threads.

Working with threads in the log file

Threads information is recorded in the log file by thread ID number enclosed in brackets. This number precedes the message that describes the process. Thread ID numbers start at 100.

The log file on the next pages shows four outbound messages, one of which has an enclosure. The messages are addressed to the loop-back address, so they are both sent and received. These example messages are produced only when the log level has been set to “Plus Protocol Transactions” to show the maximum amount of information.

In the log file, the thread number is preceded by a time stamp. The time stamp is omitted in the messages shown below for printing purposes.

[100]: ##### Initializing #####
[100]: DEBUG:Thread Manager is present. ID# for control thread is 100.
[100]: DEBUG:No protocol module in folder:"ADMIN". Saving name.
[100]: DEBUG:Found foreign mailsystem access module in folder:SMTP
[100]: Default Router (hostname):sparky.starnine.com
[100]: My hostname:smtpgw.abc.com
[100]: Mail*Link Administrator Address:local_administrator
[100]: Unlimited license.
[100]: DEBUG:Database opened correctly.
[101]: PROTOCOL:Listener thread 101 (channel=5;ioResult=1) state set to stopped.
[102]: PROTOCOL:Listener thread 102 (channel=6;ioResult=1) state set to stopped.
[103]: PROTOCOL:Listener thread 103 (channel=7;ioResult=1) state set to stopped.

Each of the receive/listener threads have been activated and their initial state set to "stopped".

[100]: DEBUG:Threads activated in the SMTP protocol module.

[100]: DEBUG:SMTP:initialization completed.

[100]: DEBUG:Created thread pool of 3 items for sending.

The main thread has created the thread pool used for the control and send threads.

[100]: DEBUG:Setting current resource file to "Mail*Link SMTP Resources".

[100]: Date:Monday, July 22, 1996.

[100]: PROTOCOL:Checking for dangling/temporary files in current spool folder.

[100]: PROTOCOL:Scanned 11 entries in current spool folder.

[100]: PROTOCOL:Found 1 files with unknown creator.

[100]: PROTOCOL:Checking for dangling/temporary files in current spool folder.

[100]: PROTOCOL:Scanned 10 entries in current spool folder.

[100]: PROTOCOL:Thread 104 will handle send/receive session.

A new control thread is created. Each of the mail files waiting to be sent will be pre-processed. This entails user-database/reply address rewriting, as well as per-destination transmission characteristics processing.

[104]: DEBUG:FROM address "local_administrator.BID@smtpgw.abc.com" rewritten to "local_administrator@smtpgw.abc.com".

[104]: PROTOCOL:N_FR address ""Tom Biddulph" <local_administrator.BID@smtpgw.abc.com>" rewritten to ""Tom Biddulph" <local_administrator@smtpgw.abc.com>".

The control thread is creating legal Internet addresses, and continues to do so for the next few seconds.

[104]: DEBUG:======== Per-host processing of "D.ml.out.21393" (outgoing).=======

[104]: PROTOCOL:Using per-host label "Mail*Link 2.x" for "local_administrator@smtpgw.abc.com".

[104]: DEBUG:Mail file "D.ml.out.21393" stamped with per-host label "Mail*Link 2.x".

The control thread is processing per-destination transmission characteristics, and continues to do so for the next few seconds.

[104]: DEBUG:FROM address "local_administrator.BID@smtpgw.abc.com" rewritten to "local_administrator@smtpgw.abc.com".

[104]: PROTOCOL:N_FR address ""Tom Biddulph" <local_administrator.BID@smtpgw.abc.com>" rewritten to ""Tom Biddulph" <local_administrator@smtpgw.abc.com>".

[104]: DEBUG:========Per-host processing of "D.ml.out.21500" (outgoing).=======

[104]: PROTOCOL:Using per-host label "Mail*Link 2.x" for "local_administrator@smtpgw.abc.com".

[104]: DEBUG:Mail file "D.ml.out.21500" stamped with per-host label "Mail*Link 2.x".

[104]: DEBUG:FROM address "local_administrator.BID@smtpgw.abc.com" rewritten to "local_administrator@smtpgw.abc.com".

[104]: PROTOCOL:N_FR address ""Tom Biddulph" <local_administrator.BID@smtpgw.abc.com>" rewritten to ""Tom Biddulph" <local_administrator@smtpgw.abc.com>".

[104]: DEBUG:======== Per-host processing of "D.ml.out.21625" (outgoing).=======

[104]: PROTOCOL:Using per-host label "Mail*Link 2.x" for "local_administrator@smtpgw.abc.com".

[104]: DEBUG:Mail file "D.ml.out.21625" stamped with per-host label "Mail*Link 2.x".

[104]: DEBUG:FROM address "local_administrator.BID@smtpgw.abc.com" rewritten to "local_administrator@smtpgw.abc.com".

[104]: PROTOCOL:N_FR address ""Tom Biddulph" <local_administrator.BID@smtpgw.abc.com>" rewritten to ""Tom Biddulph" <local_administrator@smtpgw.abc.com>".

[104]: DEBUG:======== Per-host processing of "D.ml.out.23487" (outgoing).=======

[104]: PROTOCOL:Using per-host label "Mail*Link 2.x" for "local_administrator@smtpgw.abc.com".

[104]: DEBUG:Mail file "D.ml.out.23487" stamped with per-host label "Mail*Link 2.x".

[104]: PROTOCOL:START_SESSION(mail present) returned 0

[104]: PROTOCOL:START_SYSTEM returned 101

All of the pre-processing of the files to be sent has been completed by the control thread. Send threads will now be allocated to handle the SMTP transaction(s) needed to send each file. This entails enclosure processing, as well as conducting the actual SMTP transaction.

[104]: DEBUG:Thread 105 will handle file D.ml.out.21393.

[104]: DEBUG:Thread 106 will handle file D.ml.out.21500.

[106]: DEBUG:== Processing "D.ml.out.21500" (outgoing):#

[106]: DEBUG:D.ml.out.21500:addressee="local_administrator@smtpgw.abc.com"

[106]: PROTOCOL:+++++ Using MacTCP name resolver on "sparky.starnine.com"

The control thread will actually become a send thread, since there are more files waiting to be sent than there are threads available to use.

[104]: DEBUG:======== Processing "D.ml.out.21625" (outgoing) ========

[104]: DEBUG:D.ml.out.21625:addressee="local_administrator@smtpgw.abc.com"

[104]: PROTOCOL:+++++ Using MacTCP name resolver on "sparky.starnine.com"

[104]: PROTOCOL:Host "sparky.starnine.com":Known.

The control thread is processing an outbound file and beginning the SMTP transaction. The next few messages show the same processing being performed by two send threads (105 and 106).

[105]: DEBUG:======== Processing "D.ml.out.21393" (outgoing) ========

[105]: DEBUG:D.ml.out.21393:addressee="local_administrator@smtpgw.abc.com"

[105]: PROTOCOL:+++++ Using MacTCP name resolver on "sparky.starnine.com"

[105]: PROTOCOL:Host "sparky.starnine.com":Known

[106]: PROTOCOL:Host "sparky.starnine.com":Known

[106]: DEBUG:Encoding table active for the body of the message.

Because the log level is set to "Plus Protocol Transactions", the protocol-level details of the SMTP transactions are included in the log file. The rest of this page and the most of the next one shows the two send threads (105 and 106) and the control thread acting as a send thread (104) completing their respective SMTP transactions.

[106]: Sending From:local_administrator@smtpgw.abc.com; Size:153

[106]: Rcpt:local_administrator@smtpgw.abc.com

[106]: ##### Sending Mail File #####

[106]: PROTOCOL:+++++ Using MacTCP name resolver on "sparky.starnine.com"

[106]: PROTOCOL:Attempting to connect to IP Address:198.211.93.3

[104]: DEBUG:Encoding table active for the body of the message.

[105]: DEBUG:Encoding table active for the body of the message.

[105]: Sending From:local_administrator@smtpgw.abc.com; Size:153

[105]: Rcpt:local_administrator@smtpgw.abc.com

[105]: ##### Sending Mail File #####

[105]: PROTOCOL:+++++ Using MacTCP name resolver on "sparky.starnine.com"

[105]: PROTOCOL:Attempting to connect to IP Address:198.211.93.3

[106]: PROTOCOL:Got:‘220 sparky.starnine.com Sendmail 5.0/SMI-SVR4 ready at Mon, 9 May 1994 11:48:29 +0800’

[106]: PROTOCOL:Expected:‘220’

[106]: PROTOCOL:Sending:helo smtpgw.abc.com

[106]: PROTOCOL:Got:‘250 sparky.starnine.com Hello smtpgw.abc.com, pleased to meet you’

[106]: PROTOCOL:Expected:‘250’

[106]: PROTOCOL:Sending:mail from:<local_administrator@smtpgw.abc.com>

[104]: Sending From:local_administrator@smtpgw.abc.com; Size:153

[104]: Rcpt:local_administrator@smtpgw.abc.com

[104]: ##### Sending Mail File #####

[104]: PROTOCOL:+++++ Using MacTCP name resolver on "sparky.starnine.com"

[104]: PROTOCOL:Attempting to connect to IP Address:198.211.93.3

[106]: PROTOCOL:Got:‘250 <local_administrator@smtpgw.abc.com>... Sender ok’

[106]: PROTOCOL:Expected:‘250’

[106]: PROTOCOL:Sending:rcpt to:<local_administrator@smtpgw.abc.com>

[106]: PROTOCOL:Got:‘250 <local_administrator@smtpgw.abc.com>..Recipient ok’

[106]: PROTOCOL:Expected:‘25’

[106]: PROTOCOL:Sending:data

[105]: PROTOCOL:Got:‘220 sparky.starnine.com Sendmail 5.0/SMI-SVR4 ready at Mon, 9 May 1994 11:48:31 +0800’

[105]: PROTOCOL:Expected:‘220’

[105]: PROTOCOL:Sending:helo smtpgw.abc.com

[106]: PROTOCOL:Got:‘354 Enter mail, end with "." on a line by itself’

[106]: PROTOCOL:Expected:‘354’

[104]: PROTOCOL:Got:‘220 sparky.starnine.com Sendmail 5.0/SMI-SVR4 ready at Mon, 9 May 1994 11:48:33 +0800’

[104]: PROTOCOL:Expected:‘220’

[104]: PROTOCOL:Sending:helo smtpgw.abc.com

[105]: PROTOCOL:Got:‘250 sparky.starnine.com Hello smtpgw.abc.com, pleased to meet you’

[105]: PROTOCOL:Expected:‘250’

[105]: PROTOCOL:Sending:mail from:<local_administrator@smtpgw.abc.com>

[104]: PROTOCOL:Got:‘250 sparky.starnine.com Hello smtpgw.abc.com, pleased to meet you’ Monday, May 9, 1994; Free Memory = 304756 bytes

[104]: PROTOCOL:Expected:‘250’

[104]: PROTOCOL:Sending:mail from:<local_administrator@smtpgw.abc.com>

[105]: PROTOCOL:Got:‘250 <local_administrator@smtpgw.abc.com>... Sender ok’

[105]: PROTOCOL:Expected:‘250’

[105]: PROTOCOL:Sending:rcpt to:<local_administrator@smtpgw.abc.com>

[105]: PROTOCOL:Got:‘250 <local_administrator@smtpgw.abc.com>..Recipient ok’

[105]: PROTOCOL:Expected:‘25’

[105]: PROTOCOL:Sending:data

[106]: PROTOCOL:Sending:

[104]: PROTOCOL:Got:‘250 <local_administrator@smtpgw.abc.com>... Sender ok’

[104]: PROTOCOL:Expected:‘250’

[104]: PROTOCOL:Sending:rcpt to:<local_administrator@smtpgw.abc.com>

[104]: PROTOCOL:Got:250 <local_administrator@smtpgw.abc.com>... Recipient ok’

[104]: PROTOCOL:Expected:‘25’

[104]: PROTOCOL:Sending:data

[105]: PROTOCOL:Got:‘354 Enter mail, end with "." on a line by itself’

[105]: PROTOCOL:Expected:‘354’

[106]: PROTOCOL:Got:‘250 Ok’

[106]: PROTOCOL:Expected:‘250’

[106]: PROTOCOL:Sending:quit

[106]: PROTOCOL:Got:‘221 sparky.starnine.com closing connection’

[106]: PROTOCOL:Expected:‘221’

[106]: DEBUG:========= Finished processing outgoing ========

[104]: PROTOCOL:Got:‘354 Enter mail, end with "." on a line by itself’

[104]: PROTOCOL:Expected:‘354’

A receive/listener thread has received a connection request. It will receive an incoming message. Notice that its receive transaction is interspersed with the send thread’s transmitting.

[101]: PROTOCOL:Listener thread 101 (channel=5;errCode=0) running again.

[101]: DEBUG:Receiving file on channel:5.

```
[101]:  ##### Receiving Mail #####
[101]:  PROTOCOL:Sending:220 smtpgw.abc.com Mail*Link SMTP Package 4.0
[101]:  PROTOCOL:Got:‘HELO sparky.starnine.com’
[101]:  PROTOCOL:Expected:‘helo’
[101]:  PROTOCOL:Sending:250
[101]:  PROTOCOL:Got:‘MAIL From:<local_administrator@smtpgw.abc.com>’
[101]:  PROTOCOL:Expected:‘mail from:’
[101]:  PROTOCOL:Sending:250
[101]:  PROTOCOL:Got:‘RCPT To:<local_administrator@bidtest>’
[101]:  PROTOCOL:Expected:‘rcpt to:<‘
[101]:  PROTOCOL:Sending:250
[105]:  PROTOCOL:Sending:
[104]:  PROTOCOL:Sending:
[101]:  PROTOCOL:Got:‘DATA’
[101]:  PROTOCOL:Expected:‘rcpt to:<‘
[101]:  PROTOCOL:Sending:354
[105]:  PROTOCOL:Got:250 Ok’
[105]:  PROTOCOL:Expected:‘250’
[105]:  PROTOCOL:Sending:quit
[105]:  PROTOCOL:Got:‘221 sparky.starnine.com closing connection’
[105]:  PROTOCOL:Expected:‘221’
[104]:  PROTOCOL:Got:‘250 Ok’
[104]:  PROTOCOL:Expected:‘250’
[104]:  PROTOCOL:Sending:quit
[104]:  PROTOCOL:Got:‘221 sparky.starnine.com closing connection’
[104]:  PROTOCOL:Expected:‘221’
[104]:  DEBUG:======== Finished processing outgoing ========
```

A second incoming message will be received by another receive/listener thread.

```
[102]:  PROTOCOL:Listener thread 102 (channel=6;errCode=0) running again.
[102]:  DEBUG:Receiving file on channel:6.
[102]:  ##### Receiving Mail #####
```

[102]: PROTOCOL:Sending:220 smtpgw.abc.com Mail*Link SMTP Package 4.0

[102]: PROTOCOL:Got:‘HELO sparky.starnine.com’

[102]: PROTOCOL:Expected:‘helo’

[102]: PROTOCOL:Sending:250

[101]: PROTOCOL:Sending:250

And a third incoming message will be received by another receive/listener thread. All of the available receive/listeners are now busy. The daemon can receive no further incoming messages until one of them finishes.

[103]: PROTOCOL:Listener thread 103 (channel=7;errCode=0) running again.

[103]: DEBUG:Receiving file on channel:7.

[103]: ##### Receiving Mail #####

[103]: PROTOCOL:Sending:220 smtpgw.abc.com Mail*Link SMTP Package 4.0

[103]: PROTOCOL:Got:‘HELO sparky.starnine.com’

[103]: PROTOCOL:Expected:‘helo’

[103]: PROTOCOL:Sending:250

[105]: DEBUG:======== Finished processing outgoing ========

[102]: PROTOCOL:Got:‘MAIL From:<local_administrator@smtpgw.abc.com>’

[102]: PROTOCOL:Expected:‘mail from:’

[102]: PROTOCOL:Sending:250

[101]: PROTOCOL:Got:‘QUIT’

[101]: PROTOCOL:Expected:‘mail from:’

[101]: PROTOCOL:Sending:221

[103]: PROTOCOL:Got:‘MAIL From:<local_administrator@smtpgw.abc.com>’

[103]: PROTOCOL:Expected:‘mail from:’

[103]: PROTOCOL:Sending:250

The control thread spawns another send thread to handle an outgoing message.

[104]: DEBUG:Thread 107 will handle file D.ml.out.23487.

[102]: PROTOCOL:Got:‘RCPT To:<local_administrator@bidtest>’

[102]: PROTOCOL:Expected:‘rcpt to:<‘

[102]: PROTOCOL:Sending:250

[102]: PROTOCOL:Got:‘DATA’

[102]: PROTOCOL:Expected:‘rcpt to:<‘

[102]: PROTOCOL:Sending:354

[101]: PROTOCOL:Listener thread 101 (channel=5;ioResult=1) state set to stopped.

[103]: PROTOCOL:Got:‘RCPT To:<local_administrator@bidtest>’

[103]: PROTOCOL:Expected:‘rcpt to:<‘

[103]: PROTOCOL:Sending:250

The newly created outgoing thread will perform enclosure processing, and then do the SMTP transaction on our outgoing mail file.

[107]: DEBUG:======== Processing "D.ml.out.23487" (outgoing) ========

[107]: DEBUG:D.ml.out.23487:addressee="local_administrator@smtpgw.abc.com"

[107]: PROTOCOL:+++++ Using MacTCP name resolver on "sparky.starnine.com"

[107]: PROTOCOL:Host "sparky.starnine.com":Known

[104]: PROTOCOL:finished sending mail

[104]: PROTOCOL:finished receiving mail

[104]: PROTOCOL:STOP_SYSTEM returned 0

[104]: PROTOCOL:STOP_SESSION returned 0

The control thread has finished dealing with outgoing messages. It now notices that there are files that have been received that need to be processed. This processing of inbound messages entails enclosure decoding and database processing.

[104]: DEBUG:======== Processing "D.ml.in.27258" (incoming) ========

[103]: PROTOCOL:Got:‘DATA’

[103]: PROTOCOL:Expected:‘rcpt to:<‘

[103]: PROTOCOL:Sending:354

[102]: PROTOCOL:Sending:250

[103]: PROTOCOL:Sending:250

[103]: PROTOCOL:Got:‘QUIT’

[103]: PROTOCOL:Expected:‘mail from:’

[103]: PROTOCOL:Sending:221

[107]: DEBUG:Encoding table active for the body of the message.

[104]: DEBUG:Mail file "D.ml.in.27258" stamped with per-host label "Mail*Link 2.x".

[102]: PROTOCOL:Got:‘QUIT’

[102]: PROTOCOL:Expected:‘mail from:’

[102]: PROTOCOL:Sending:221

[103]: PROTOCOL:Listener thread 103 (channel=7;ioResult=1) state set to stopped.

[104]: DEBUG:RCPT address "local_administrator@bidtest" rewritten to "local_administrator.BID@bidtest".

[102]: PROTOCOL:Listener thread 102 (channel=6;ioResult=1) state set to stopped.

[104]: Received From:"Tom Biddulph" <local_administrator@smtpgw.abc.com>; Size:647

[104]: Rcpt:local_administrator@bidtest

[100]: PROTOCOL:Thread 108 will handle send/receive session.

[108]: PROTOCOL:START_SESSION(module asked to run) returned 0

[108]: PROTOCOL:START_SYSTEM returned 101

[108]: PROTOCOL:finished receiving mail

[108]: PROTOCOL:finished sending mail

[108]: PROTOCOL:STOP_SYSTEM returned 0

[108]: PROTOCOL:STOP_SESSION returned 0

[108]: DEBUG:========Processing "D.ml.in.27585" (incoming)========

[107]: DEBUG:Successfully UUencoded attachment "Mail*Link SMTP Script (MS)".

[108]: DEBUG:Mail file "D.ml.in.27585" stamped with per-host label "Mail*Link 2.x".

[107]: Sending From:local_administrator@smtpgw.abc.com; Size:52606

[107]: Rcpt:local_administrator@smtpgw.abc.com

[107]: ##### Sending Mail File #####

[107]: PROTOCOL:+++++ Using MacTCP name resolver on "sparky.starnine.com"

[107]: PROTOCOL:Attempting to connect to IP Address:198.211.93.3

[108]: DEBUG:RCPT address "local_administrator@bidtest" rewritten to "local_administrator.BID@bidtest".

[108]: Received From:"Tom Biddulph" <local_administrator@smtpgw.abc.com>; Size:647

[108]: Rcpt:local_administrator@bidtest

[108]: DEBUG:======== Processing "D.ml.in.27630" (incoming) ========

[108]: DEBUG:Mail file "D.ml.in.27630" stamped with per-host label "Mail*Link 2.x".

[108]: DEBUG:RCPT address "local_administrator@bidtest" rewritten to "local_administrator.BID@bidtest".

[107]: PROTOCOL:Got:‘220 sparky.starnine.com Sendmail 5.0/SMI-SVR4 ready at Mon, 9 May 1994 11:49:03 +0800’

[107]: PROTOCOL:Expected:‘220’

[107]: PROTOCOL:Sending:helo smtpgw.abc.com

[107]: PROTOCOL:Got:‘250 sparky.starnine.com Hello smtpgw.abc.com, pleased to meet you’

[107]: PROTOCOL:Expected:‘250’

[107]: PROTOCOL:Sending:mail from:<local_administrator@smtpgw.abc.com>

[108]: Received From:"Tom Biddulph" <local_administrator@smtpgw.abc.com>; Size:647

[108]: Rcpt:local_administrator@bidtest

[107]: PROTOCOL:Got:‘250 <local_administrator@smtpgw.abc.com>... Sender ok’

[107]: PROTOCOL:Expected:‘250’

[107]: PROTOCOL:Sending:rcpt to:<local_administrator@smtpgw.abc.com>

[107]: PROTOCOL:Got:‘250 <local_administrator@smtpgw.abc.com>... Recipient ok’

[107]: PROTOCOL:Expected:‘25’

[107]: PROTOCOL:Sending:data

[107]: PROTOCOL:Got:‘354 Enter mail, end with "." on a line by itself’

[107]: PROTOCOL:Expected:‘354’

[107]: PROTOCOL:Sending:

[107]: PROTOCOL:Got:‘250 Ok’

[107]: PROTOCOL:Expected:‘250’

[107]: PROTOCOL:Sending:quit

[107]: PROTOCOL:Got:‘221 sparky.starnine.com closing connection’

[107]: PROTOCOL:Expected:‘221’

[107]: DEBUG:======== Finished processing outgoing========

Another connection attempt from the outside world. Thread 101 will handle this transaction.

[101]: PROTOCOL:Listener thread 101 (channel=5;errCode=0) running again.

[101]: DEBUG:Receiving file on channel:5.

[101]: ##### Receiving Mail #####

[101]: PROTOCOL:Sending:220 smtpgw.abc.com Mail*Link SMTP Package 4.0

[101]: PROTOCOL:Got:‘HELO sparky.starnine.com’

[101]: PROTOCOL:Expected:‘helo’

[101]: PROTOCOL:Sending:250

[101]: PROTOCOL:Got:‘MAIL From:<local_administrator@smtpgw.abc.com>’

[101]: PROTOCOL:Expected:‘mail from:’

[101]: PROTOCOL:Sending:250

[101]: PROTOCOL:Got:‘RCPT To:<local_administrator@bidtest>’

[101]: PROTOCOL:Expected:‘rcpt to:<‘

[101]: PROTOCOL:Sending:250

[101]: PROTOCOL:Got:‘DATA’

[101]: PROTOCOL:Expected:‘rcpt to:<‘

[101]: PROTOCOL:Sending:354

[101]: PROTOCOL:Sending:250

[101]: PROTOCOL:Got:‘QUIT’

[101]: PROTOCOL:Expected:‘mail from:’

[101]: PROTOCOL:Sending:221

[101]: PROTOCOL:Listener thread 101 (channel=5;ioResult=1) state set to stopped.

The old control thread finished its task and exited. A new control thread is now created to process outgoing and incoming mail.

[100]: PROTOCOL:Thread 109 will handle send/receive session.

[109]: PROTOCOL:START_SESSION(module asked to run) returned 0

[109]: PROTOCOL:START_SYSTEM returned 101

[109]: PROTOCOL:finished receiving mail

[109]: PROTOCOL:finished sending mail

[109]: PROTOCOL:STOP_SYSTEM returned 0

[109]: PROTOCOL:STOP_SESSION returned 0

All outgoing mail has been processed by the control thread (there was none in this example). The control thread will now look for incoming mail that needs to be processed.

[109]: DEBUG:======== Processing "D.ml.in.29189" (incoming) ========

[109]: DEBUG:Mail file "D.ml.in.29189" stamped with per-host label "Mail*Link 2.x".

[109]: DEBUG:Successfully UUdecoded attachment "Mail*Link SMTP Script (MS)".

[109]: DEBUG:RCPT address "local_administrator@bidtest" rewritten to "local_administrator.BID@bidtest".

[109]: Received From:"Tom Biddulph" <local_administrator@smtpgw.abc.com>; Size:762

[109]: Rcpt:local_administrator@bidtest

Quit has been selected in the daemon's File menu. All processing is completed. Then, the main thread prints gateway statistics before exiting. (See page 101 for example statistics).

[100]: +++++ Daemon statistics follow +++++

[100]: +++++ End of Statistics Report +++++

[100]: DEBUG:TCP Status on channel 0 (flags:0xd,0x20,0x0)

[100]: DEBUG:TCP Status on channel 1 (flags:0xd,0x20,0x0)

[100]: DEBUG:TCP Status on channel 2 (flags:0xd,0x20,0x0)

[101]: PROTOCOL:Listener thread 101 (channel=5;errCode=-23012) running again.

[102]: PROTOCOL:Listener thread 102 (channel=6;errCode=-23012) running again.

[103]: PROTOCOL:Listener thread 103 (channel=7;errCode=-23012) running again.

[100]: DEBUG:Minimum Thread stack space was 22086 bytes.

Symptoms and solutions

This section describes several problems and their possible causes, and provides simple solutions. If one of these "symptoms" describes the problem you have, read that section and follow the recommendations for resolving the problem.

QM Administrator isn't processing messages

Mail from QuickMail users is not reaching the smtp.daemon queue. The QM Administrator log file contains this message:

```
ERROR (-35) MyRoutine: Cannot get vref & dirid from prefs file
```

The smtp.daemon and the Mail*Link resources used by the QM Administrator need to agree on the location of the spool folder and ADMIN folder. The Mail*Link resources used by the QM Administrator will not do anything until it can find this information.

The Mail*Link SMTP/QM folder does not have a fixed pathname, so these locations cannot be hard-coded.The smtp.daemon communicates the location of the folders to the QM Administrator in the Mail*Link Prefs file located in System Folder:Preferences:StarNine on the boot disk. This is the “rendezvous” file.

The message shown above indicates that the QM Administrator could not find the required rendezvous information. This message is sometimes seen on initial install if the QM Administrator is executed before the smtp.daemon. If it is seen at a later time, it might indicate that there is file system damage, or damage to one of the prefs files.

To troubleshoot this problem, follow these steps:

1. Check to see if the Mail*Link Prefs file exists in the StarNine folder within the Preferences folder in the System Folder.

   If not, launch the smtp.daemon and verify that it creates the file. Then activate the Mail*Link resources in the QM Administrator (force a connect) to verify that the error message disappears. If the error message is still present,

2. Quit the smtp.daemon, remove the Mail*Link Prefs file from the StarNine folder within the Preferences folder in the System Folder, then restart the smtp.daemon.

   Then, activate the Mail*Link resources in the QuickMail (force a connect) and see if the message is still present. If the error message is still present,

3. Quit the smtp.daemon and try renaming the real Mail*Link SMTP Preferences file (not the rendezvous file).

   The real Mail*Link SMTP Preferences file is also named “Mail*Link Prefs”, but it resides in the ADMIN folder within the Mail*Link SMTP/QM folder. After renaming the file,

4. Restart the smtp.daemon and redo your preferences configuration.

   Then activate the Mail*Link resources in QM Administrator to see if the message is still present. If its still present,

5. Run Disk First Aid (7.2 or later) o verify that there is no file system damage.

Outbound mail is queued but not delivered

Mail destined for SMTP mail systems is in the spool folder but is not being delivered to the default mail host or other target host.

Normally, an SMTP transaction is initiated with the default mail host or (depending on how the gateway is configured) with the target host in the message address within 30 seconds of the time it is placed in the spool folder. In this error condition, something is preventing the outbound mail from being delivered.

To troubleshoot this problem:

1. Make sure that both the smtp.daemon and the QM Administrator are running.

   If not, launch them.

2. Check the messages in the gateway log file.

3. Choose Check Pending Mail in the Windows menu, and then check the recipient Internet addresses for validity.

   If you find an outbound address field that is invalid, double-click on the entry to correct the address, or remove the mail from the queue.

4. Click the Naming Hosts icon in the Preferences dialog and check the name of the default mail host.

5. Run ML Test to verify TCP/IP communication with that host.

   See the online *ML Test Guide* for details. If you can ping the default mail host but cannot establish an SMTP connection,

6. Open the hosts file in the Macintosh System Folder.

   If you don't see a line specifying the default mail hostname and IP address, add one. See the online *MacTCP Guide* or *Open Transport 1.1 manual*.

7. Make sure that MacTCP or Open Transport is correctly configured.

   See the online *MacTCP Guide* or *Open Transport 1.1 manual*.

8 Open the hosts file (such as /etc/hosts) on the default mail host.

If you don't see a line specifying the gateway hostname (My Hostname) and the Mac's IP address, add an entry to the hosts file.

See "Errors in TCP/IP communication" on page 127 for more information about testing the TCP/IP configuration.

Outbound mail is not placed in the spool folder

No messages addressed to SMTP destinations are being received by the gateway and placed in the spool folder.

QuickMail users are sending messages but they are not being received by the smtp.daemon. The failure point is either within the QuickMail system or between the QM Administrator and the smtp.daemon.

To troubleshoot this problem:

1 Make sure that QuickMail users are addressing mail correctly.

2 Make sure that both the smtp.daemon and the QM Administrator are running.

If not, launch them.

3 Check the messages in the gateway log file.

4 Check the messages in the gateway log file.

Mail goes out but is not delivered

Some outbound mail is not being delivered to its destination.

If the log file shows outbound mail being handled with no errors but the mail is not being delivered, the problem is either with the address specified in the message or the way the mail is being routed by other systems.

To troubleshoot this problem:

1 Check that the Internet address is correct.

2 Check for improper user route declarations on the default mail host, which could be directing mail to the wrong destination.

Inbound mail is not being received

Mail is coming in for QuickMail users but the smtp.daemon is not receiving it.

The first thing to check if the smtp.daemon is not receiving mail is the number of Receiver threads configured in the SMTP/TCP panel of the Preferences dialog. If the number of Receiver threads is set to 0, the smtp.daemon will not receive mail. Configure a higher number of Receiver threads to fix the problem.

If mail sent from an SMTP mail system to QuickMail users is being queued on the default mail host but not delivered to the smtp.daemon, and the number of Receiver threads is greater than zero, the failure point may be either in the TCP/IP connection between the two hosts or in the smtp.daemon itself. To troubleshoot this problem:

1. Make sure that both the smtp.daemon and the QM Administrator are running.

   If not, launch them.

2. Check that there is sufficient free disk space to allow the mail items to be written to the Macintosh hard disk.

3. Check the messages in the gateway log file.

4. Run ML Test to verify TCP/IP communication with that host.

   See the online *ML Test Guide* for details.

   If you can ping the default mail host but cannot establish an SMTP connection,

5. Open the hosts file in the Macintosh System Folder.

   If you don't see a line specifying the default mail hostname and IP address, add an entry to the hosts file. See the online *MacTCP Guide* or *Open Transport 1.1 manual* for more information.

6. Make sure that MacTCP or Open Transport is correctly configured.

   See the online *MacTCP Guide* or *Open Transport 1.1 manual.*

7 Open the hosts file (such as /etc/hosts) on the default mail host.

If you don't see a line specifying the gateway hostname (My Hostname) and the Mac's IP address, add an entry to the hosts file.

Errors in TCP/IP communication

If you become aware of a TCP/IP network problem involving the gateway, first try to reduce the problem to a set of specific symptoms. Unix systems have many utilities that can help to verify where the problem is occurring, for example, ping(1M) and netstat(1M) are commonly used to test communication between specific systems to narrow down the range of the communication problem.

In addition to these Unix tools, StarNine also provides a Macintosh-based TCP/IP test utility, which is documented in the online *ML Test Guide*.

Messages sent to the administrator

The QuickMail interface module occasionally generates error messages that are sent directly to the administrator. If these error messages occur frequently, it indicates that the Mail*Link SMTP system is not functioning properly.

When to call Technical Support

If the remedies described in the preceding sections do not fix the problem you have encountered, please verify that the problem you are encountering is not listed as a known problem in the "README" file on the Install disk. Whenever possible, we have provided workarounds for known problems.

Before you call, check whether the Macintosh is running Open Transport or MacTCP, and whether it is a PPC or 68K system. The smtp.daemon reports this information in its log window when it is launched. Then, send a mail message addressed to "maillink" so you can have the smtp.daemon configuration and statistics ready. See "Checking gateway configuration and statistics" on page 103.

Error Messages and Codes

The messages described in this section are some of the most common messages written to the log. It describes messages that can be generated by the daemon when the default Message Logging level is set.

The messages you see in the log file can be generated not only by the gateway, but also by QuickMail, MacTCP or Open Transport, or the Macintosh itself

Error and status messages

The messages described in this section are some of the most common messages written to the log when the default "Message Logging" level is set (see "Changing the log level" on page 26).

- ##### Initializing version 4.0 of Mail*Link® SMTP #####
  ##### Closing Mail*Link SMTP #####

  These messages are informational. They indicate normal processing states of the smtp.daemon.

- *User-name* added to Legal User List.

  The smtp.daemon has registered the specified QuickMail user in its internal registered users database. This message normally occurs when the user sends mail through the gateway to the SMTP world.

- Bridge currently busy.

  The gateway is active and cannot perform the requested action.

- DataBased users exceed licensed number.

  The number of users in the database exceeds the authorized user limit and the gateway will not operate. You can correct this error by deleting users from the database until the authorized user limit is reached.

- Duplicate key found!!!!
  Duplicate key: (*zone*)…

  A key ID for the gateway has been registered in another AppleTalk zone (an illegal condition). This could mean that a copy of the

Mail*Link SMTP software has been installed on another Macintosh at your site, using a copy of the Key file that comes with the software. See “Authorization numbers” on page 85 for background information.

First, restart the Macintosh. If restarting the Macintosh does not resolve the problem, you need to verify that no one else at your site has installed your copy of the Mail*Link software. Use a network utility such as InterPoll to check AppleTalk name registration. Occasionally a hardware bridge will inadvertently register a name twice, once in the local zone, and once in a nonexistent zone (normally with a zone ID of zero).

- Enclosure:…

  This is a normal message that is generated when the gateway detects a file enclosure with a message.

- Error while creating spool folder

  The gateway cannot create the spool folder in the SMTP folder within the Mail*Link SMTP/QM folder. It will not be able to queue mail without this folder. Exit smtp.daemon and make sure that you have sufficient disk space. If the problem persists when you launch smtp.daemon again, contact StarNine support.

- FSWrite…

  A file system error has occurred while working with a temporary file.

- Illegal user:…

  A QuickMail user who is not authorized to use the gateway is trying to send a message and cannot be added to the database.

- Initializing the SMTP Protocol module

  This message indicates that the interface to SMTP is being setup. It is generated only when “Plus SMTP Transactions” has been selected in the log level menu. See “Changing the log level” on page 26.

- Initialization of SMTP failed

  The SMTP protocol subsystem will not restart.

- Invalid License.

  The gateway cannot find a valid Key file. See “Authorization numbers” on page 85 for background information.

- Load of Init module failed

  Mail*Link is unable to load the module that controls access to the database and performs other initialization procedures. Try quitting the smtp.daemon and then restarting it.

- Mail sent From:...

  A mail message was sent from the specified user to the smtp.daemon.

- Memory request failed

  The gateway is unable to allocate sufficient memory for some operation. Exit the smtp.daemon, increase the application’s Current Memory Size by at least 32K and try again. If problems persist, contact StarNine support.

- No Valid Keys found

  The gateway is unable to find a valid “hard-key” file. This could mean that the Mail*Link Key file was moved from the ADMIN folder when you upgraded, or that another Mail*Link gateway is using the key file.

- Number of Licensed Users =...

  This message indicates the number of QuickMail users who can be registered to use the smtp.daemon.

- Processing a nested message (no RFC822 header generated).

  This message is informational. RFC headers included as part of forwarded or reply messages are indented by one space to prevent the gateway from interpreting address information contained in the nested header.

- Received Enclosure:...

  A mail message received from SMTP contains a file enclosure.

- Received To:...

A mail message has been received from SMTP.

- Recipient: *User-name*

  This message will be displayed as each address is submitted to SMTP. It is generated only when "Plus Protocol Transactions" has been selected in the log level menu.

- Returning mail! Illegal user:...

  This message may mean that the gateway received an incoming message and QuickMail does not recognize the addressee in any of its active Servers. If autoregistration is disabled or the maximum number of users has already been registered, this message may also mean that the sender is not a registered user.

- Returning statistics to:...

  This message means that the gateway received a message addressed to maillink and is returning the information described in "Checking gateway configuration and statistics" on page 103.

- Running with QuickMail Version:...

  Specifies the version of the QuickMail software.

- star9Init: openDataBase:

  The smtp.daemon is unable to open the user database. If you must regenerate a new registered users database, quit the smtp.daemon program and then restart.

- Unlimited license.

  Indicates the presence of a site license key.

- User Not Registered:...

  The intended recipient is not recognized as a QuickMail user.

Numeric error codes

The following error codes can appear in the Mail*Link SMTP log file. Error messages begin with the word ERROR:, followed by a descriptive string and the error number. Any further information that accompanies this error message will be displayed on the following line. For example:

2:12:51 PM:ERROR: dskFulErr(-34)
getEnclosure failed

Log messages are time stamped, as shown in this example. The error code in this example is "-34."

Table 4: Macintosh error codes

ERROR CODE	DESCRIPTION
-33:	Directory is full.
-34:	Disk is full.
-35:	No such volume.
-36:	I/O error.
-38:	File not open.
-39:	End-of-file.
-42:	Too many files open.
-43:	File not found.
-44:	Diskette is write protected.
-45:	File is locked.
-46:	Volume is locked.
-47:	File is busy.
-48:	Duplicate filename.
-108	Not enough room in the heap zone of memory.
-109	Miscellaneous memory errors.
-192	A resource could not be found.

Table 5: AppleTalk error codes

ERROR CODE	DESCRIPTION
-1096:	Request failed.
-1097:	Too many requests outstanding.
-1098:	Too many sockets open.
-1099:	Bad or unopen socket number.

Table 6: MacTCP error codes

ERROR CODE	DESCRIPTION
-23000:	Unable to initialize the local network handler.
-23001:	The manually set address is configured improperly.
-23002:	A configuration resource is missing.
-23003:	Not enough room in the application heap.
-23004:	Error in getting address from a server or the address is already in use by another machine.
-23005:	A TCPClose command was already issued so there is no more data to send on this connection.
-23006:	The total amount of data described by the WDS was either 0 or greater than 65,535 bytes.
-23007:	The TCP stream already has an open connection.
-23008:	This TCP stream has no open connection.
-23009:	There are already 64 TCP streams open.
-23010:	The specified TCP stream is not open.
-23011:	An open stream is already using this receive buffer area.
-23012:	The TCP connection went down.

Table 6: MacTCP error codes (Continued)

ERROR CODE	DESCRIPTION
-23013:	The receive buffer area pointer is 0.
-23014:	The RDS refers to receive buffers not owned by the user.
-23015:	The connection came up halfway and then failed.
-23016:	The specified command action was not completed in the specified time period.
-23017:	A TCP connection already exists between this local IP address and the TCP port, and the specified remote IP address and TCP port.
-23032:	The packet is too large to send without fragmenting and the Don't Fragment flag is set.
-23033:	The destination host is not responding to address resolution requests.
-23035:	Ping of IP address failed.
-23036:	Insufficient internal driver buffers available to fragment this packet on send.
-23037:	No gateway available to handle routing of packets to off-network destinations.
-23041:	The hostName field had a syntax error. The address was given in dot notation (that is, W.X.Y.Z) and did not conform to the syntax for an IP address.
-23042:	The name specified cannot be found in the cache. The domain name resolver will now query the domain name server and return the answer in the callback procedure.
-23043:	No result procedure was passed to the address translation call when the resolver must be used to find the address.
-23044:	No name server can be found for the specified name string.
-23045:	This domain name does not exist.
-23046:	None of the known name servers are responding.

Table 6: MacTCP error codes (Continued)

ERROR CODE	DESCRIPTION
-23047:	The domain name server has returned an error.
-23048:	Not enough memory is available to issue the needed DNR query or to build the DNR cache.

Table 7: Open Transport errors

ERROR CODE	DESCRIPTION
-3150	The specified protocol address was in an incorrect format or contained illegal information.
-3151	The specified protocol options were an incorrect format or contained illegal information.
-3152	The user does not have permission to negotiate the specified address or options.
-3153	The specified EndpointRef or TEndpoint* does not refer to a valid endpoint.
-3154	The endpoint could not allocate an address, or an address was required and not supplied by the client.
-3155	The function was issued in the wrong sequence.
-3156	An invalid sequence number was specified, or a NULL call pointer was specified when rejecting a connection request.
-3157	A system error occurred
-3158	An asynchronous event has occurred on this endpoint.
-3159	The amount of client data specified was not within the bounds allowed by the endpoint.
-3160	The number of bytes allocated to hold a result is greater than zero, but not sufficient to store the result.
-3161	The endpoint is in asynchronous mode, but the flow control mechanism prevents the endpoint from accepting any data at this time.

Table 7: Open Transport errors (Continued)

ERROR CODE	DESCRIPTION
-3162	This endpoint is in non-blocking mode, but no data is currently available. It is also returned by LookupName when no names are found.
-3163	No disconnect indication is available.
-3164	No unit data error indication currently exists on this endpoint.
-3165	An invalid flag was specified.
-3166	No orderly release indication currently exists on this endpoint.
-3167	This action is not supported by this endpoint.
-3168	An "incompatible" function was called while another operation was still ongoing (e.g. SndUData called while an OptionManagement call was still outstanding).
-3169	Bad structure type requested for OTAlloc
-3169	An unsupported structure type was passed in the structType field. This error is also returned when the structType field is inconsistent with the endpoint type.
-3170	The endpoint name is invalid.
-3171	The argument qlen when the endpoint was bound with Bind was zero.
-3172	The requested address is in use, or this endpoint does not support multiple connections with the same local and remote addresses. This result code indicates that a connection already exists. As a return value for a Bind call, it may also indicate that no dynamic addresses are available for protocols or configuration methods that allow dynamic addressing.
-3173	There are outstanding connection indications on the endpoint. All other connection indications must be handled either by rejecting them with SndDisconnect, or by accepting them with Accept.
-3174	The endpoint that is to accept the connection is not the same kind of endpoint as this one.

Table 7: Open Transport errors (Continued)

ERROR CODE	DESCRIPTION
-3175	When this endpoint was bound (see Bind), the qlen parameter was greater than zero. But to accept a connection on an alternate endpoint, such as this one, the endpoint must be bound with a qlen parameter equal to zero.
-3176	The address to which this endpoint is bound differs from that of the endpoint that received the connection request; thus, this endpoint cannot accept this connection request.
-3177	The maximum number of outstanding indications has been reached for the endpoint.
-3178	An unspecified protocol error occurred.
-3179	A call to Sync was made at non-SystemTask time.
-3180	An outstanding call was canceled.
-3200	Permission denied
-3201	No such file or directory
-3201	This error literally means “no such file or directory”. It is returned when an attempt is made to open an endpoint or mapper that does not exist in the system.
-3204	An I/O error occurred.
-3208	Bad file number
-3210	Try operation again later
-3211	Not enough space
-3211	Open Transport cannot allocate enough memory to meet your request.
-3215	The device you are trying to access is busy and could not complete your request.
-3216	File exists
-3234	In order to complete the operation the request, Open Transport would have to block, and the endpoint is in non-blocking mode.

Table 7: Open Transport errors (Continued)

ERROR CODE	DESCRIPTION
-3237	Socket operation on non-socket
-3238	Destination address required
-3239	Message too long
-3240	Protocol wrong type for socket
-3241	Protocol not available
-3242	Protocol not supported
-3243	Socket type not supported
-3244	Operation not supported on socket
-3247	Address already in use
-3248	Can't assign requested address
-3249	Network is down
-3250	Network is unreachable
-3251	Network dropped connection on reset
-3252	Software caused connection abort
-3253	Connection reset by peer
-3254	No buffer space available
-3255	Socket is already connected
-3256	Socket is not connected
-3257	Can't send after socket shutdown
-3258	Too many references: can't splice
-3259	The requested operation timed out.
-3260	Connection refused
-3263	Host is down

Table 7: Open Transport errors (Continued)

ERROR CODE	DESCRIPTION
-3264	No route to host
-3271	Open Transport cannot allocate enough system resources (usually

A

ISO 8859-1 Translation Tables

This appendix shows the translation tables that are used when ISO 8859-1 translation is selected for message body or file processing.

ISO 8859-1 translation operates on incoming messages only if the From address is included in the destination database and the 2 way ISO-8859-1 characteristic is set for the address

Macintosh to ISO 8859-1

Table 8: shows Macintosh-to-ISO translations performed on outbound mail when ISO 8859-1 or ISO 8859-1 MIME is selected in the per-destination processing method.

Table 8: Macintosh-to-ISO 8859-1 Translation Table

Sending Macintosh		ISO 8859-1	
Hex Value	**Character**	**Hex Value**	**Character**
80	**Ä**	**C4**	'A'
81	**Å**	**C5**	Å
82	**Ç**	**C7**	Ç
83	**É**	**C9**	É
84	**Ñ**	**D1**	Ñ
85	**Ö**	**D6**	'O'
86	**Ü**	**DC**	'U'
87	**á**	**E1**	á
88	**à**	**E0**	à
89	**â**	**E2**	â
8A	**ä**	**E4**	ä
8B	**ã**	**E3**	ã

Table 8: Macintosh-to-ISO 8859-1 Translation Table (Continued)

Sending Macintosh		ISO 8859-1	
Hex Value	**Character**	**Hex Value**	**Character**
8C	**å**	**E5**	å
8D	**ç**	**E7**	**ç**
8E	**é**	**E9**	**é**
8F	**è**	**E8**	**è**
90	**ê**	**EA**	**ê**
91	**ë**	**EB**	**ë**
92	**í**	**ED**	**í**
93	**ì**	**EC**	**ì**
94	**î**	**EE**	**î**
95	**ï**	**EF**	**ï**
96	**ñ**	**F1**	**ñ**
97	**ó**	**F3**	**ó**
98	**ò**	**F2**	**ò**
99	**ô**	**F4**	**ô**
9A	**ö**	**F6**	**ö**
9B	**õ**	**F5**	**õ**
9C	**ú**	**FA**	**ú**
9D	**ù**	**F9**	**ù**
9E	**û**	**FB**	**û**
9F	**ü**	**FC**	**ü**
A0	**†**	**2B**	+
A1	∞	**B0**	∞
A2	**¢**	**A2**	**¢**
A3	**£**	**A3**	£
A4	**§**	**A7**	§
A5	**•**	**B7**	•
A6	**¶**	**B6**	**¶**
A7	**ß**	**DF**	ß
A8	**®**	**AE**	®
A9	**©**	**A9**	©

Table 8: Macintosh-to-ISO 8859-1 Translation Table (Continued)

Sending Macintosh		ISO 8859-1	
Hex Value	Character	Hex Value	Character
AA	™	2A	*
AB	´	B4	´
AC	¨	A8	¨
AD	π	2A	*
AE	Æ	C6	Æ
AF	Ø	D8	Ø
B0	•	2A	*
B1	±	B1	±
B2	£	2A	*
B3	≥	2A	*
B4	¥	A5	¥
B5	m	B5	m
B6	∂	2A	*
B7	Â	2A	*
B8	’	2A	*
B9	p	70	p
BA	Ú	2A	*
BB	ª	AA	ª
BC	º	BA	º
BD	W	2A	*
BE	æ	E6	æ
BF	ø	F8	ø
C0	¿	BF	¿
C1	¡	A1	¡
C2	¬	AC	¬
C3	÷	2A	*
C4	ƒ	66	f
C5	ª	3D	=

Table 8: Macintosh-to-ISO 8859-1 Translation Table (Continued)

Sending Macintosh		ISO 8859-1	
Hex Value	**Character**	**Hex Value**	**Character**
C6	**D**	**2A**	*
C7	**«**	**AB**	«
C8	**»**	**BB**	»
C9	**…**	**2A**	*
CA	**NBSP**	**A0**	NBSP
CB	**À**	**C0**	À
CC	**Ã**	**C3**	Ã
CD	**Õ**	**D5**	Õ
CE	**Œ**	**2A**	*
CF	**œ**	**2A**	*
D0	**–**	**AD**	SHY
D1	**—**	**AD**	SHY
D2	**“**	**22**	"
D3	**”**	**22**	"
D4	**‘**	**27**	'
D5	**’**	**27**	'
D6	**∏**	**F7**	∏
D7	**‡**	**2A**	*
D8	**ÿ**	**FF**	ÿ
D9	**Ÿ**	**FF**	ÿ
DA	**⁄**	**2F**	/
DB	**¤**	**A4**	¤
DC	**‹**	**3C**	<
DD	**›**	**3E**	>
DE	**fi**	**DE**	Þ
DF	**fl**	**FE**	þ
E0	**‡**	**2A**	*
E1	**·**	**B7**	•

Table 8: Macintosh-to-ISO 8859-1 Translation Table (Continued)

Sending Macintosh		ISO 8859-1	
Hex Value	Character	Hex Value	Character
E2	,	2C	,
E3	„	2C	,
E4	‰	25	%
E5	Â	C2	Â
E6	Ê	CA	Ê
E7	Á	C1	Á
E8	Ë	CB	Ë
E9	È	C8	È
EA	Í	CD	Í
EB	Î	CE	Î
EC	Ï	CF	Ï
ED	Ì	CC	Ì
EE	Ó	D3	Ó
EF	Ô	D4	Ô
F0		2A	*
F1	Ò	D2	Ò
F2	Ú	DA	Ú
F3	Û	DB	Û
F4	Ù	D9	Ù
F5	|	7C	|
F6	ˆ	5E	^
F7	˜	7E	~
F8	¯	AF	¯
F9	˘	2A	*
FA	˙	27	'
FB	∞	B0	°
FC	¸	B8	,
FD	˝	A8	¨

Table 8: Macintosh-to-ISO 8859-1 Translation Table (Continued)

Sending Macintosh		ISO 8859-1	
Hex Value	Character	Hex Value	Character
FE	˛	B8	¸
FF	ˇ	2A	*

ISO 8859-1 to Macintosh

The ISO-to-Macintosh translations shown in the Table 9: are performed on incoming mail when MIME ISO-8859-1 encoding is used in the message body or file enclosure, or when the From address appears in the destination database and has the 2 way ISO-8859-1 translation option set.

If an ISO 8859-1 character is marked (n/a) in Table 9:, it means that there is no character mapped to that value in the ISO 8859-1 character set, so the Macintosh character is passed through without translation.

Table 9: ISO 8859-1-to-Macintosh Translation Table

ISO 8859-1		Receiving Macintosh	
Hex Value	Character	Hex Value	Character
80	(n/a)	80	Ä
81	(n/a)	81	Å
82	(n/a)	82	Ç
83	(n/a)	83	É
84	(n/a)	84	Ñ
85	(n/a)	85	Ö
86	(n/a)	86	Ü
87	(n/a)	87	á
88	(n/a)	88	à
89	(n/a)	89	â
8A	(n/a)	8A	ä
8B	(n/a)	8B	ã
8C	(n/a)	8C	å
8D	(n/a)	8D	ç

Table 9: ISO 8859-1-to-Macintosh Translation Table (Continued)

ISO 8859-1		Receiving Macintosh	
Hex Value	Character	Hex Value	Character
8E	(n/a)	8E	é
8F	(n/a)	8F	è
90	(n/a)	90	ê
91	(n/a)	91	ë
92	(n/a)	92	í
93	(n/a)	93	ì
94	(n/a)	94	î
95	(n/a)	95	ï
96	(n/a)	96	ñ
97	(n/a)	97	ó
98	(n/a)	98	ò
99	(n/a)	99	ô
9A	(n/a)	9A	ö
9B	(n/a)	9B	õ
9C	(n/a)	9C	ú
9D	(n/a)	9D	ù
9E	(n/a)	9E	û
9F	(n/a)	9F	ü
A0	NBSP	CA	NBSP
A1	¡	C1	¡
A2	¢	A2	¢
A3	£	A3	£
A4	¤	DB	¤
A5	¥	B4	¥
A6	¦	7C	|
A7	§	A4	§
A8	¨	AC	¨
A9	©	A9	©
AA	ª	BB	ª
AB	«	C7	«

Table 9: ISO 8859-1-to-Macintosh Translation Table (Continued)

ISO 8859-1		Receiving Macintosh	
Hex Value	Character	Hex Value	Character
AC	¬	C2	¬
AD	SHY	D0	–
AE	®	A8	®
AF	¯	F8	¯
B0	°	FB	∞
B1	±	B1	±
B2	2	32	2
B3	3	33	3
B4	´	AB	´
B5	m	B5	m
B6	¶	A6	¶
B7	•	E1	·
B8	¸	FC	¸
B9	1	31	1
BA	º	BC	º
BB	»	C8	»
BC	¼	2A	*
BD	½	2A	*
BE	¾	2A	*
BF	¿	C0	¿
C0	À	CB	À
C1	Á	E7	Á
C2	Â	E5	Â
C3	Ã	CC	Ã
C4	'A'	80	Ä
C5	Å	81	Å
C6	Æ	AE	Æ
C7	Ç	82	Ç
C8	È	E9	È
C9	É	83	É

Table 9: ISO 8859-1-to-Macintosh Translation Table (Continued)

ISO 8859-1		Receiving Macintosh	
Hex Value	Character	Hex Value	Character
CA	Ê	E6	Ê
CB	Ë	E8	Ë
CC	Ì	ED	Ì
CD	Í	EA	Í
CE	Î	EB	Î
CF	Ï	EC	Ï
D0	Ð	44	D
D1	Ñ	84	Ñ
D2	Ò	F1	Ò
D3	Ó	EE	Ó
D4	Ô	EF	Ô
D5	Õ	CD	Õ
D6	'O'	85	Ö
D7	×	78	x
D8	Ø	AF	Ø
D9	Ù	F4	Ù
DA	Ú	F2	Ú
DB	Û	F3	Û
DC	'U'	86	Ü
DD	Ý	59	Y
DE	Þ	DE	fi
DF	ß	A7	ß
E0	à	88	à
E1	á	87	á
E2	â	89	â
E3	ã	8B	ã
E4	ä	8A	ä
E5	å	8C	å
E6	æ	BE	æ

Table 9: ISO 8859-1-to-Macintosh Translation Table (Continued)

ISO 8859-1		Receiving Macintosh	
Hex Value	**Character**	**Hex Value**	**Character**
E7	ç	8D	ç
E8	è	8F	è
E9	é	8E	é
EA	ê	90	ê
EB	ë	91	ë
EC	ì	93	ì
ED	í	92	í
EE	î	94	î
EF	ï	95	ï
F0	ð	64	d
F1	ñ	96	ñ
F2	ò	98	ò
F3	ó	97	ó
F4	ô	99	ô
F5	õ	9B	õ
F6	ö	9A	ö
F7	∏	D6	∏
F8	ø	BF	ø
F9	ù	9D	ù
FA	ú	9C	ú
FB	û	9E	û
FC	ü	9F	ü
FD	ý	79	y
FE	þ	DF	fl
FF	ÿ	D8	ÿ

B

Mail Overflow

This appendix describes how to use the Mail Overflow application manually. Mail Overflow must be located in the ADMIN folder within the Mail*Link SMTP/QM folder.

For a description of what causes mail overflow conditions, see Chapter 3.

The main symptom of a mail overflow condition is that more than 200 files are present in the smtp.daemon's spool folder. The smtp.daemon will be slow to respond in that case, so the easiest way to check the number of queued messages is to look at the smtp.daemon's Status window.

If you prefer, you can view the list of queued messages by clicking Display in the General Preferences panel or by selecting Check Mail in the daemon's Windows menu, but the queue window may be slow to open.

If you suspect that a mail overflow condition exists, you should refrain from opening the spool folder in the Finder. The Finder has to perform a GetFileList operation to open the folder, and that may take several minutes.

Using Mail Overflow

To use Mail Overflow, follow these steps:

1 Quit the smtp.daemon.

If the smtp.daemon has terminated abnormally, restart the Macintosh before proceeding. If you launch Mail Overflow while the smtp.daemon is still running, you will see an alert telling you to quit the smtp.daemon first.

2 Launch Mail Overflow.

If Mail Overflow recognizes a valid overflow condition, it renames the spool folder "Overflow" and creates a new spool folder at the

same level. If it doesn't detect an overflow condition, it opens a dialog box that enables you to select a folder containing mail files. See "Folder names" on page 153.

3 Restart the smtp.daemon manually.

When the smtp.daemon comes up, Mail Overflow begins moving mail files from the Overflow folder into the spool folder at a rate that the smtp.daemon can handle efficiently. By default, it moves 5 messages (each of which can include two or three physical files) and then waits 20 seconds, repeating this "spoon feeding" process until the spool folder holds 100 files.

To avoid creating another overflow condition, Mail Overflow pauses until the smtp.daemon has transferred several messages out of the spool folder, at which point it starts moving files again.

Mail Overflow quits automatically and removes the Overflow folder when its job is finished.

Setting preferences

Mail Overflow creates its own Preferences file, which has settings that determine the pace at which it will move messages from the Overflow folder to the spool folder. For most systems, you can leave the default settings. However, if the Macintosh has a fast CPU or a very slow one, you may want to change the settings to speed up or slow down the process. To do so, select Preferences in the Configure menu of the Mail Overflow utility.

You can also set these preferences in the Overflow panel of the Preferences dialog in the smtp.daemon.

These are the items you can set:

- Stop Moving files limit

  This limit applies to physical Macintosh files, not messages. It determines at what point Mail Overflow will stop and wait for messages to be transferred by the smtp.daemon.

  As described earlier, when there are too many files in the spool folder, the smtp.daemon has less time to process and transfer files.

If the Macintosh has a fast CPU, you can try increasing this limit and check the effect on the smtp.daemon's speed.

- Number "mail" files to move

  This field specifies the number of mail files to move at a time. A mail file includes two or three actual files, depending on whether the mail has enclosures.

- Interval to wait before next move

  This field specifies the number of seconds Mail Overflow waits before moving additional files into the spool folder. This pause gives the smtp.daemon a chance to finish working before receiving new files. If the Macintosh has a fast CPU, you can decrease this interval. If it is very slow, you may want to increase the interval.

Folder names

Mail Overflow has a menu option to explicitly choose a folder containing mail files. It will then perform its standard operation of moving files from that folder into the spool folder. For example, suppose the smtp.daemon had several hundred messages queued and the administrator has split the files into several folders. You can choose the appropriate folder name by selecting "Select 'Spool from' Folder" in the Configure menu.

An ordinary file dialog opens, in which you can locate and select the folder that contains the mail files. When you select the folder and click "Open," Mail Overflow will handle the rest.

Messages and error conditions

This section describes the messages you may see in the Mail Overflow status window and log. It also describes alerts that can be displayed.

Status messages

The Mail Overflow status window is open while the utility is running. The mailbox icon changes as Mail Overflow is operating to indicate status, and the following messages can appear in the boxed area of the window:

- Restart the smtp.daemon and Mail Overflow will handle the rest.

  After Mail Overflow has created the new spool folder, this message appears in the status window. Mail Overflow will not begin moving messages until the smtp.daemon is running.

- Waiting... we will be moving files soon.

  This message is displayed in the status window while Mail Overflow is waiting for the specified interval before moving additional files in to the spool folder.

- Moving files

  This message is displayed briefly while the files are being moved.

- Moving “Bad Mail” and quitting.

  In most cases, the spool folder contains only mail files. However, if the folder contains other items, for example, an application or a folder, Mail Overflow does not move those items into the new spool folder. Instead, it creates a separate folder named “Bad Mail” at the same level as the spool folder, moves the items there, and displays this message.

  When Mail Overflow quits, it removes the Overflow folder.

If you launch Mail Overflow with no overflow condition

If you launch Mail Overflow when fewer than 200 files are in the spool folder (or fewer than the number specified in the Overflow panel of the smtp.daemon’s Preferences dialog), an alert is displayed that states:

```
This is not an overflow situation. Do you want to select
a folder of mail to add to the spool folder?
```

If you click OK in the alert dialog, a file dialog opens in which you can select a folder containing mail files. The assumption is that you already renamed the spool folder before launching Mail Overflow. In that case, select the name of the renamed spool folder and click OK. Otherwise, click Cancel in the dialog and simply restart the smtp.daemon.

If you launch Mail Overflow while the daemon is running

If you launch Mail Overflow while the smtp.daemon is running, you will see an alert instructing you to quit the smtp.daemon. Mail Overflow will not launch while the smtp.daemon is running. Click OK, quit the smtp.daemon, and then launch Mail Overflow again.

Mail Overflow log file

If Mail Overflow encounters problems such as lack of memory or disk space while functioning, it creates a log file named "Mail Overflow Log" in the ADMIN folder. The log will tell you why some messages were not moved into the spool folder. For example:

```
**********************************************
Failed moving mail file to the spool folder.
Mail File = D.Mso.123544
Error = -33
```

If the message was not moved because of a problem with the file rather than available disk space or some other Macintosh condition, it is moved into the "Bad Mail" folder before Mail Overflow quits.

Glossary

Numerics

7-bit/8-bit characters

The difference between 7- and 8-bit characters becomes important when sending Macintosh characters, many of which are 8-bit, to systems that use the eighth bit of for some other purpose. Characters that have an ASCII value <128 can (by definition) be represented in 7 bits. The original ASCII character set contained only 7-bit characters. Many of the standard Macintosh characters, such as •and p, require a full 8 bits for representation. 8-bit characters can have an ASCII value >127—both the Macintosh and ISO-8859-1 character sets contain 8-bit characters.

A

administrator

The person who sets up a network mail system, creates user login accounts and passwords, creates groups, sets security, and maintains the mail system.

alias

A shorthand replacement for a longer address, used to associate cumbersome e-mail addresses with easily remembered names.

AppleDouble

A file format that separates a Macintosh file's resource fork and data fork into two files for transmission as a data stream. Some files, such as those created in Microsoft® Word, will maintain formatting information across platforms. A non-Macintosh recipient can read the data fork only, which is present as a separate file.

AppleSingle

A file format that combines a Macintosh file's resource fork and data fork in a single file for transmission as a data stream. AppleSingle header information contains the information needed to reconstruct the separate forks. Non-Macintosh users who receive a file in AppleSingle format must use the Single utility for extracting the data fork of the file. See the online *Single Utility Guide*.

AppleTalk network system

The system of network software and hardware used in various implementations of Apple's communications network.

ARP

Address Resolution Protocol: A protocol in the TCP/IP protocol suite that maps IP addresses to physical hardware addresses.

ARPANET

A wide area network that served as a basis for networking research and provided a central backbone during development of the Internet. See also *DARPA Internet*.

Authorization keys

Quarterdeck/Starnine's new access control technology for tracking the number of user names and aliases allowed to use the SMTP gateway. Edited in the Authorization dialog via the Authorization menu item in the Window menu.

B

binary file

Any Macintosh file whose file TYPE is not TEXT; for example, a compiled program, or a Microsoft® Word file containing formatting information.

Bootstrap Protocol

A protocol in the TCP/IP protocol suite that allows a host to find its IP address and other useful configuration information.

broadcast

A network transmission technique in which data is sent to all attached hosts.

D

DARPA Internet

Defense Advanced Research Projects Agency Internet: The collection of networks and gateways, including the ARPANET, MILNET, and NSFnet that use TCP/IP protocols to communicate. Also called the Internet. See also *ARPANET*, *MILNET*, *NSFnet*.

datagram

A packet of data passed across a network. IP attaches a header to data received from TCP to make an IP datagram. See also *segment*.

DDP-IP gateway

Datagram Delivery Protocol-Internet Protocol gateway: A gateway that connects AppleTalk networks to TCP/IP networks by converting a TCP/IP packet encapsulated in AppleTalk's Datagram Delivery Protocol (DDP) to Ethernet or Token Ring format, and vice versa. Required if the Macintosh TCP/IP connection is on LocalTalk.

default mail host

A system on the local network that is responsible for forwarding mail out to the Internet. If there no designated mail host on the network, the default mail host can be any IP host that has the capability of forwarding mail. Mail addressed to an "unknown" system is always forwarded to the default mail host.

domain name

A domain name is part of the Internet-wide hierarchical naming scheme managed by the Network Information Center (NIC). Typically, a domain name includes subnames (called labels), separated by periods, for example, "abc.com", where "com" is the top-level domain (identifying this as a commercial enterprise) and "abc" specifies a subdomain (such as the name of the company). The NIC administers the top-level domains and is responsible for assigning subdomains. After an organization obtains authority for a domain from the NIC, it can assign subordinate domain names.

domain name resolver

Software that requests IP address information from domain name servers.

domain name server

A domain name server is software that maps domain names to IP addresses. Host names within the domain are specified in a domain name server's database, along with each host's IP address.

domain name system

An Internet service for mapping a host name to an IP address.

decimal-dot notation

The representation for a 32-bit IP address. Each address is written as four decimal integers separated by periods. See also *IP address*.

E

e-mail

The standard abbreviation for "electronic mail."

Ethernet

A high-speed local area network that consists of a cable technology and a series of communication protocols. The hardware (cable) provides the physical link to connect systems together.

F

fragmentation

The process of breaking an IP datagram into smaller pieces so that it can be transferred over a network that has a small maximum packet size.

frame

A group of bits forming a logical transmission unit that is sent between data-link layer entities.

FTP

File Transfer Protocol: A protocol in the TCP/IP protocol suite for transferring files across a network.

G

gateway

A link between two dissimilar systems. A gateway can be a hardware device that provides translation or encapsulation between two different

types of protocols, such as the “DDP-IP gateway” referred to in this guide. A gateway can also be software that provides common access between two software systems, such as the Mail*Link SMTP e-mail gateway. Mail*Link SMTP transfers mail messages between different types of mail systems.

H

hardware address

An address used by a physical network. In an Ethernet network, each machine is assigned a 48-bit hardware address.

I

ICMP

Internet Control Message Protocol: A protocol in the TCP/IP protocol suite that hosts and gateways on a network use to inform each other of error conditions.

Internet

This term refers to the world-wide system of interconnected networks running the “Internet Protocol” (IP). See also *Internet address*.

Internet address

An e-mail address that includes a user name and domain name separated by an at-sign.

IP

Internet Protocol: One of the fundamental protocols in the TCP/IP protocol suite, IP is responsible for sending data across multiple networks.

IP address

A host address that consists of a 4-byte number, of which the “network number,” between 1 and 3 bytes, was acquired from the Network Information Center.

ISO

International Standards Organization: An international body that specifies network protocol standards. The ISO developed the Open Systems Interconnection (OSI) model. See also *OSI*.

ISO-8859-1 MIME

The ISO-8859-1 character set includes the full Latin alphabet as 8-bit, single-byte, coded graphic characters. ISO-8859-1 is a standard character set used by most of Europe and many Unix systems. See Appendix A for the translation tables.

If ISO-8859-1 MIME is used in a processing method, outbound messages are encoded first by mapping the Macintosh character set to ISO-8859-1 and then encoded in MIME. Inbound messages from the specified address are decoded from MIME, and also decoded from ISO-8859-1 to the Macintosh character set. See also *MIME, Quoted-Printable*.

K

Keys

Access control technology for tracking the number of user names and aliases allowed to use the SMTP gateway. Keys were previously implemented as files on disk ("hard-keys"). They are now entered as authorization numbers in the Authorization dialog from the daemon's Windows menu.

L

LocalTalk

A system of cables, cable extenders, and connector boxes that link computers and peripheral devices in an AppleTalk network system.

M

method

A method is a named combination of transmission characteristics that can be applied selectively to particular destination addresses.

MILNET

MILitary NETwork: A wide area network on the DARPA Internet that provides network service to military installations. See also *DARPA Internet*.

MIME

Multipurpose Internet Mail Extensions (MIME) is a new standard for Internet mail formats. It uses headers that describe the character set and content type of the message, and provides a series of extensions to the

way Internet mail is formatted, including support for rich-text format, binary attachments, multipart messages, images, sound, and video. See also *ISO-8859-1, Quoted-Printable*.

N

network administration

Management of the software and hardware that connects computers in a network. This task includes assigning addresses to devices, maintaining network data files across the network, and setting up inter-network routing.

NSFnet

National Science Foundation NETwork: A wide area network on the DARPA Internet that provides network service to the scientific community. See also *DARPA Internet*.

O

octet

8 bits. IP addresses consist of 4 octets. The term octet is used instead of byte because not all hosts use 8-bit bytes.

OSI

Open Systems Interconnection model: A 7-layer reference model developed by the ISO that is used to describe network systems architecture.

P

packet

A unit of data transmitted on a network.

PACKIT

A format in which multiple files are compacted into a single file.

per-destination processing

Message and enclosure processing that is performed selectively for a particular destination address.

process

Programs that communicate; for instance, a file transfer process on one host talks to a file transfer process on another host. A host may be running several processes.

protocol

A set of rules that computers must follow to exchange data over a network.

Q

Quoted-Printable MIME

The Quoted-Printable MIME encoding represents printable 8-bit ASCII characters in a way that is unlikely to be modified by mail transport. With the exceptions detailed in RFC 1521, it converts an octet into an equal-sign (=) followed by a two-digit hexadecimal representation of the octet's value. Uppercase letters (ABCDEF) are used when sending hexadecimal data. For example, the octet with the ASCII value 12 (a form feed) is sent as "=0C". Or, an octet with the value 61 (an equal sign) is sent as "=3D". The Quoted-Printable MIME options have their own 76-character line length limits built in. See also *ISO-8859-1, MIME*.

R

RARP

Reverse Address Resolution Protocol: A protocol in the TCP/IP protocol suite that maps physical hardware addresses to IP addresses.

RFC

Request for Comments: A series of technical notes used by the Internet community that contain reports of work, proposals, and protocol specifications.

RFC 822

The Internet standard for dealing with mail is defined in this RFC. It defines the most widespread and commonly understood message format in use on the Internet, consisting of standard headers and a message body.

RFC 1341

The MIME standard for dealing with mail is defined in this RFC. See also *MIME*.

RIP

Routing Information Protocol: A protocol in the TCP/IP protocol suite that allows gateways and hosts to exchange network routing information.

route

The path that network traffic takes to get from source to destination.

S

segment

A unit of data sent from TCP on one host to TCP on another. Each segment travels across the IP network in an IP datagram. See also *datagram*.

server

A program running on a host that offers a service to other hosts on the network. For instance, a file server provides access to its files. Computers that run server programs are often referred to as servers. See also *domain name server*.

single utility

A Unix utility distributed by Quarterdeck/StarNine as source code in the C programming language. Unix users can compile the utility and use it to extract the data fork from a file enclosure received in AppleSingle or AppleDouble format. See the online *Single Utility Guide*.

SMTP

Simple Mail Transfer Protocol: A protocol in the TCP/IP protocol suite that allows electronic mail to be transferred. SMTP and UUCP are the most common transport agents for e-mail on the Internet.

subnet address

A technique that allows multiple physical networks to share the same IP network address.

subnet mask

Software used to select bits from an IP address for subnet addressing.

T

TCP

Transmission Control Protocol: One of the fundamental protocols in the TCP/IP protocol suite, TCP provides for the reliable exchange of data between two processes.

Telnet

A protocol in the TCP/IP protocol suite that allows a terminal on one host to appear as if it were directly connected to a remote host.

text file

Any Macintosh file whose file TYPE is TEXT; for example, any file saved as "Text Only."

U

UDP

User Datagram Protocol: A protocol in the TCP/IP protocol suite that provides unreliable data transmission between two processes.

UUDECODE/UUENCODE

An encoding and decoding method originally used for UUCP mail and widely supported in gateways connecting to the Internet. For Macintosh or PC recipients, the receiving gateway must decode the file. Unix systems have the uudecode utility readily available for explicitly decoding an enclosure.

Z

zone

A logical grouping of devices physically located on one or more networks.

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