

Frequently asked questions

Orientation

[How many people use qmail?](#)

[What are the most common reasons for using qmail?](#)

[Is qmail compatible with sendmail?](#)

[What operating systems does qmail support?](#)

Installation

[How do I find the qmail package?](#)

[How do I install qmail?](#)

[How do I switch slowly from sendmail to qmail?](#)

[Why is qmail installed under /var?](#)

How to solve problems

[What should I do if I have trouble with qmail?](#)

[Where can I find technical information about Internet mail?](#)

Controlling the appearance of outgoing messages

[How do I set up user masquerading?](#)

[How do I set up host masquerading?](#)

[How do I set up Mail-Followup-To automatically?](#)

Routing outgoing messages

[How do I set up a separate queue for a SLIP/PPP link?](#)

[How do I send local messages to another host?](#)

[How do I set up a null client?](#)

[How do I send outgoing mail through UUCP?](#)

[How do I deal with ``CNAME lookup failed temporarily''?](#)

Routing incoming messages by host

[How do I receive mail for another host name?](#)

[How do I set up a virtual domain?](#)

[How do I set up several virtual domains for one user?](#)

[How do I organize a big network?](#)

Routing incoming messages by user

[How do I set up a mailing list?](#)

[How do I create aliases with dots?](#)

[How do I use sendmail's .forward files with qmail?](#)

[How do I use sendmail's /etc/aliases with qmail?](#)

[How do I make qmail defer messages during NFS or NIS outages?](#)

[How do I change which account controls an address?](#)

[How do I use procmail with qmail?](#)

[How do I use elm's filter with qmail?](#)

[How do I forward unrecognized usernames to another host?](#)

Setting up servers

[How do I run qmail-smtpd under tcpserver?](#)

[How do I allow selected clients to send outgoing messages through my SMTP server?](#)

[How do I fix up messages from dumb clients?](#)

[How do I send messages by SMTP to an authorized dialup host when it makes an SMTP connection?](#)

[How do I set up qmail-pop3d?](#)

[How do I set up qmail-qmqpd?](#)

[How do I set up qmail-qmtpd?](#)

[How do I record all incoming SMTP traffic?](#)

Configuring UNIX MUAs to work with qmail

[How do I make pine use qmail-inject instead of SMTP?](#)

[How do I make MH use qmail-inject instead of SMTP?](#)

[How do I make BSD mail/mailx generate a Date with the local time zone?](#)

[How do I stop Sun's dtcm from hanging?](#)

Administration

[How do I tell qmail to read locals and virtualdomains?](#)

[How do I safely stop qmail-send?](#)

[How do I manually run the queue?](#)

[How do I run a supervised copy of qmail?](#)

[How do I avoid syslog?](#)

[How do I rejuvenate a message?](#)

[How do I keep a copy of all incoming and outgoing mail messages?](#)

Reliability

What types of filesystems are safe for mail?
How do I back up and restore the queue disk?

Efficiency

How do I tell qmail to do more deliveries at once?
Does qmail scale to extremely large queues?
Does qmail back off from dead hosts?

Orientation

How many people use qmail?

Answer: As of October 2001, more than 700000 reachable IP addresses are running qmail as their SMTP server; qmail's growth over the past year is by far the [fastest](#) of any MTA. qmail handles a huge percentage of all Internet mail.

The qmail mailing list has more than 2000 subscribers (counting sublists as only one subscriber).

What are the most common reasons for using qmail?

Answer: Here are the top ten reasons I've heard from qmail users.

1. Security. qmail doesn't let intruders into your machine.
 2. Reliability. qmail never loses mail.
 3. Speed. qmail delivers your mail much more quickly than sendmail, without compromising reliability.
 4. Low memory use. qmail can handle dozens of simultaneous deliveries on an old 16MB 486.
 5. User-controlled mailing lists. Users don't have to pester the system administrator to create new lists.
 6. Virtual hosts made easy. qmail pioneered multiple-domain support.
 7. Straightforward administration. qmail works with a minimum of fuss.
 8. Flexible program deliveries. qmail provides a powerful interface for external mail processors.
 9. Variable Envelope Return Paths. This feature (used by [ezmlm](#)) provides 100% automatic bounce handling for mailing lists of any size.
 10. The maildir format. This feature makes it easy to set up high-volume distributed [POP toasters](#).
-

Is qmail compatible with sendmail?

Answer: Yes. qmail supports [forward](#), [/etc/aliases](#), binmail deliveries to a central mail spool in the usual mbox format, the `/usr/{lib,sbin}/sendmail` interface for mail injection, and the normal UNIX user database in `/etc/passwd`. There is a [checklist](#) for large sites moving from sendmail to qmail.

What operating systems does qmail support?

Answer: qmail works on practically all UNIX systems: AIX, BSD/OS, FreeBSD, HP/UX, Irix, Linux, NetBSD, OpenBSD, OSF/1, SunOS, Solaris, etc. It automatically adapts itself to new UNIX variants.

qmail does not support Windows NT.

Installation

How do I find the qmail package? I'd like to install qmail.

Answer: All qmail releases are announced at cr.yip.to/qmail.html. You can pick up the qmail package there.

As of November 1998, the latest qmail package is qmail-1.03.tar.gz, with MD5 checksum 622f65f982e380dbe86e6574f3abcb7c. This package has been mirrored at hundreds of sites around the Internet. If you want to find a mirror close to you, try [ftpsearch](#).

How do I install qmail?

Answer: Follow the step-by-step instructions in INSTALL in the qmail package. If you are upgrading from a previous version, use UPGRADE instead of INSTALL.

How do I switch slowly from sendmail to qmail? I'm thinking of moving the heaven.af.mil network over to qmail, but first I'd like to give my users a chance to try out qmail without affecting current sendmail deliveries. We're using NFS.

Answer: Find a host in your network, say pc.heaven.af.mil, that isn't running an SMTP server. (If people are using mail addresses @pc.heaven.af.mil, you should already have an MX pointing pc.heaven.af.mil to your mail hub.)

Set up a new MX record pointing lists.heaven.af.mil to pc.heaven.af.mil. Install qmail on pc.heaven.af.mil. Replace pc with lists in /var/qmail/control/*. Make the qmail man pages available on all your machines.

Now tell your users about qmail. A user can forward joe@heaven.af.mil to joe@lists.heaven.af.mil to have his mail delivered through qmail. He can set up .qmail files; he can start running his own mailing lists @lists.heaven.af.mil.

When you're ready to turn sendmail off, you can set up pc.heaven.af.mil as your new mail hub. Add heaven.af.mil to /var/qmail/control/locals, and change the

heaven.af.mil MX to point to pc.heaven.af.mil. Make sure you leave `lists.heaven.af.mil` in `/var/qmail/control/locals` so that transition addresses will continue to work.

Why is qmail installed under `/var`? Aren't programs supposed to be in `/usr`? Aren't configuration files supposed to be in `/etc`?

Answer: Some sites have clusters of machines that NFS-mount a single `/usr` disk. Files can't go in `/usr` unless they are the same on every machine. (This used to be much more common than it is now.) The qmail programs depend on uids that are often different on every machine; for example, the `qmail-queue` program is setuid `qmailq`.

`/etc` is also a machine-specific directory. Unfortunately, it is very small on some machines. (This, too, used to be much more common than it is now.) The qmail configuration often takes quite a bit of disk space.

If I had put the qmail programs into `/usr/bin` or `/usr/local/bin` or `/usr/qmail/bin`, or if I had put the qmail configuration into `/etc`, some installations would have failed horribly. In contrast, `/var/qmail` works.

You can set up symbolic links under `/var/qmail` if you want to move the qmail files to different disks.

How to solve problems

What should I do if I have trouble with qmail?

Answer: Read the documentation! Most questions are answered by

- this list of frequently asked questions;
- the [qmail pictures](#), which show how qmail handles various types of messages;
- the other how-to pages in `/var/qmail/doc`; and
- the qmail manual pages in `/var/qmail/man/cat*`.

Your system includes a wide variety of monitoring tools to show you what qmail is doing:

- the qmail log, as introduced in `/var/qmail/doc/TEST.*`;
- `instcheck` (in the qmail install directory), which looks for installation problems;
- `qmail-showctl`, which explains your current configuration;

- dot-forward -n (if you have installed dot-forward), which lets you see how a .forward file will be interpreted;
- fastforward -n (if you have installed fastforward), which lets you see how a forwarding table will be interpreted;
- ps, which lets you see what processes are running;
- recordio (if you have installed ucspi-tcp) and tcpdump, which let you see what data is flowing over a TCP connection; and
- a syscall tracing tool, trace or truss or strace or ktrace, which lets you see exactly how a program is interacting with the system.

If all else fails, you could try asking for help on the [qmail mailing list](#). Your message should give complete answers to the following three questions:

1. What exactly did you do?
2. What exactly did the computer do?
3. What exactly did you expect the computer to do?

For checkpassword and other POP password checkers you should instead try the [password mailing list](#). For serialmail and other part-time-dialup questions you should instead try the [serialmail mailing list](#).

Where can I find technical information about Internet mail?

Answer: cr.yip.to/im.html explains the Internet mail infrastructure. cr.yip.to/smtp.html explains the Simple Mail Transfer Protocol. cr.yip.to/immhf.html explains the Internet mail message header format.

Controlling the appearance of outgoing messages

 How do I set up user masquerading? I'd like my own From lines to show "The Boss" <boss@af.mil> rather than god@heaven.af.mil.

Answer: Add MAILHOST=af.mil, MAILUSER=boss, and MAILNAME='The Boss' to your environment.

To override From lines supplied by your MUA, add QMAILINJECT=f to your environment.

 How do I set up host masquerading? All the users on this host, zippy.af.mil, are users on af.mil. When joe sends a message to fred, the message should say

```
From: joe@af.mil
To: fred@af.mil
```

without zippy anywhere.

Answer:

```
echo af.mil > /var/qmail/control/defaulthost  
chmod 644 /var/qmail/control/defaulthost
```

How do I set up Mail-Followup-To automatically? I'd like to include
Mail-Followup-To: sos@heaven.af.mil

when I send a message to the sos@heaven.af.mil mailing list.

Answer: Add QMAILMFTFILE=\$HOME/.lists to your environment, and put
sos@heaven.af.mil into \$HOME/.lists.

Routing outgoing messages

How do I set up a separate queue for a SLIP/PPP link?

Answer: Use [serial mail](#).

How do I send local messages to another host? All the mail for af.mil should be delivered to our disk server, pokey.af.mil. I've set up an MX record for af.mil in DNS. The problem is that we also have a machine named af.mil; when a user on that host sends a message to af.mil, af.mil tries to deliver it locally. How do I stop that?

Answer: Remove af.mil from /var/qmail/control/locals, and [tell qmail to read locals](#). Make sure the MX is set up properly before you do this. Also make sure that pokey [can receive mail for](#) af.mil.

How do I set up a null client? I'd like zippy.af.mil to send all mail to bigbang.af.mil.

Answer:

```
echo :bigbang.af.mil > /var/qmail/control/smtproutes  
chmod 644 /var/qmail/control/smtproutes
```

Make sure to [disable local delivery](#). Also turn off qmail-smtpd in /etc/inetd.conf, and give inetd a HUP.

How do I send outgoing mail through UUCP? I need qmail to send all outgoing mail via UUCP to my upstream UUCP site, gonzo.

Answer: Put

```
:alias-uucp
into /var/qmail/control/virtualdomains, and tell qmail to read virtualdomains. Put
|preline -df /usr/bin/uux - -r -gC -a"${SENDER:-MAILER-DAEMON}"
gonzo!rmail "($DEFAULT@$HOST)"
(all on one line) into ~alias/.qmail-uucp-default. (For some UUCP software you
will need to use -d instead of -df.)
```

How do I deal with ``CNAME lookup failed temporarily"? The log showed that a message was deferred for this reason. Why is qmail doing CNAME lookups, anyway?

Answer: The SMTP standard does not permit [aliased hostnames](#), so qmail has to do a CNAME lookup in DNS for every recipient host. ``CNAME lookup failed temporarily" means that the relevant DNS server is down. qmail will try again soon.

Routing incoming messages by host

How do I receive mail for another host name? I'd like our disk server to receive mail addressed to af.mil. The disk server has IP address 18.25.0.1.

Answer: Add af.mil to /var/qmail/control/locals, and tell qmail to read locals. Add af.mil to /var/qmail/control/rcpthosts.

Make sure that there is an appropriate MX record in DNS for af.mil. Here's how to create the MX record using tinydns:

```
cd /etc/tinydns/root
./add-mx af.mil 18.25.0.1
make
```

If you're using BIND, put

```
af.mil. IN MX 0 a.mx.af.mil.
a.mx.af.mil. IN A 18.25.0.1
```

into the appropriate zone file. signal BIND to reload, and check for errors in the appropriate system log. Don't forget the trailing dots.

How do I set up a virtual domain? I'd like any mail for nowhere.mil, including root@nowhere.mil and postmaster@nowhere.mil and so on, to be delivered to Bob. I've set up the MX already.

Answer: Add nowhere.mil:bob to /var/qmail/control/virtualdomains, and tell qmail to read virtualdomains. Add nowhere.mil to /var/qmail/control/rcpthosts.

Now mail for whatever@nowhere.mil will be delivered locally to bob-whatever. Bob can set up ~bob/.qmail-default to catch all the possible addresses, ~bob/.qmail-info to catch info@nowhere.mil, etc.

How do I set up several virtual domains for one user? Bob wants another virtual domain, everywhere.mil, but he wants to handle nowhere.mil users and everywhere.mil users differently. How can we do that without setting up a second account?

Answer: Add two lines to /var/qmail/control/virtualdomains:

```
nowhere.mil:bob-nowhere
```

```
everywhere.mil:bob-everywhere
```

Tell qmail to read virtualdomains. Add both nowhere.mil and everywhere.mil to /var/qmail/control/rcpthosts. Now Bob can set up separate .qmail-nowhere-* and everywhere-* files. He can even set up .qmail-nowhere-default and .qmail-everywhere-default.

How do I organize a big network? I'm in charge of the 18.25 network. I have a lot of machines, and I don't know where to start.

Answer: First, choose the domain name where your users will receive mail. This is normally the shortest domain name you control. If you are in charge of *.movie.edu, you can use addresses like joe@movie.edu.

Second, choose the machine that will publish IP address information for movie.edu. Install a DNS server on that machine. Configure the server to handle movie.edu and

25.18.in-addr.arpa. For example, if you are using the tinydns server from the djbdns package:

```
cd /etc/tinydns/root  
  
./add-ns movie.edu 18.25.0.1  
  
./add-ns 25.18.in-addr.arpa 18.25.0.1  
  
make
```

Here 18.25.0.1 is the IP address of the machine. If you're using BIND instead of tinydns, you will have to create new movie.edu and 25.18.in-addr.arpa zone files, each with SOA and NS records.

Third, for each machine on your network, create a host name in DNS:

```
cd /etc/tinydns/root  
  
./add-host bobshost.movie.edu 18.25.0.57  
  
make
```

(You can do a series of add commands and then a final make.) If you're using BIND instead of tinydns, you'll have to create an A record for each machine in the movie.edu zone file, and a PTR record for each machine in the 25.18.in-addr.arpa zone file.

Fourth, choose a mail exchanger, i.e., a machine that will know what to do with mail for different users at movie.edu. Set up an MX record in DNS to deliver movie.edu messages to the mail exchanger:

```
cd /etc/tinydns/root  
  
./add-mx movie.edu 18.25.0.2  
  
make
```

Fifth, install qmail on the mail exchanger. Put movie.edu into /var/qmail/control/rcpthosts so that the machine will accept messages for users at movie.edu. Put

```
movie.edu:alias-movie
```

into /var/qmail/control/virtualdomains.

Sixth, make a list of machines where mail should end up, and create `~alias/.qmail-movie-user` files on the mail exchanger forwarding messages to those machines. For example, if mail for Bob should end up on Bob's workstation, put

```
bob@bobshost.movie.edu
```

into `~alias/.qmail-movie-bob`. Do the same for other users. If you have many users, you should set up these aliases with `fastforward` instead.

Seventh, install `qmail` on each machine where mail should end up. On `bobshost.movie.edu`, for example, `qmail` will automatically configure itself to accept messages for `bob@bobshost.movie.edu` and deliver them to Bob's mailbox on `bobshost`.

Eighth, on all your machines, put `movie.edu` into `/var/qmail/control/defaulthost`, so that Bob's outgoing mail uses an address of `bob@movie.edu`.

Scalability notes: You can replicate DNS service across several machines to spread the incoming DNS load. You can replicate mail aliases across several mail exchangers to spread the incoming mail load. You can use `tinydns` to provide addresses for a huge number of mail exchangers, and optionally to try to select an address close to the client.

Setting up servers

How do I run `qmail-smtpd` under `tcpserver`? `inetd` is barfing at high loads, cutting off service for ten-minute stretches. I'd also like better connection logging.

Answer: Install [ucspi-tcp](#). Remove the `smtp` line from `/etc/inetd.conf`, and put the two lines

```
tcpserver -v -u 7770 -g 2108 0 smtp /var/qmail/bin/qmail-smtpd \  
2>&1 | /var/qmail/bin/splogger smtpd 3 &
```

into your system boot scripts; replace `7770` with your `qmaild` uid, and replace `2108` with your `nofiles` gid. Don't forget the `&`. The change will take effect at your next reboot.

By default, `tcpserver` allows at most 40 simultaneous `qmail-smtpd` processes. To raise this limit to 400, use `tcpserver -c 400`.

How do I allow selected clients to send outgoing messages through my SMTP server? `qmail-smtpd` is giving the error ```sorry, that domain isn't in my list of allowed rcpthosts (#5.7.1)''` for messages to any domain not listed in `/var/qmail/control/rcpthosts`.

Answer: This answer assumes that you are [running qmail-smtpd under tcpserver](#).

Create `/etc/tcp.smtp` containing

```
1.2.3.6:allow,RELAYCLIENT=""
127.:allow,RELAYCLIENT=""
```

to authorize relaying from clients with IP addresses 1.2.3.6 and 127.*. Run

```
tcprules /etc/tcp.smtp.cdb /etc/tcp.smtp.tmp < /etc/tcp.smtp
```

Insert

```
-x /etc/tcp.smtp.cdb
```

after `tcpserver` in your system boot scripts. The change will take effect at your next reboot.

If you make any changes to `/etc/tcp.smtp`, you must run

```
tcprules /etc/tcp.smtp.cdb /etc/tcp.smtp.tmp < /etc/tcp.smtp
```

again. You do not have to restart `tcpserver`.

How do I fix up messages from dumb clients?

Answer: This answer assumes that you are [running qmail-smtpd under tcpserver](#) and have also set up `tcpserver` to [allow those clients to relay](#).

Put

```
fixme:fixup
```

into `/var/qmail/control/virtualdomains`, and [tell qmail to read virtualdomains](#). Put

```
| bouncesaying 'Permission denied' [ "$HOST" != "@fixme" ]
| qmail-inject -f "$SENDER" -- "$DEFAULT"
```

into `~alias/.qmail-fixup-default`. Insert `@fixme` into `RELAYCLIENT` in the appropriate lines in `/etc/tcp.smtp`:

```
1.2.3.6:allow,RELAYCLIENT="@fixme"
```

Finally, run

```
tcprules /etc/tcp.smtp.cdb /etc/tcp.smtp.tmp < /etc/tcp.smtp
```

to tell `tcpserver` about the change. You do not have to restart `tcpserver`.

An alternative answer is to use the experimental `ofmipd` program in the [mess822](#) package. `ofmipd` includes an integrated From-rewriting database and more powerful hostname rewriting features than `qmail-inject`.

How do I send messages by SMTP to an authorized dialup host when it makes an SMTP connection? I've heard about ETRN and AutoTURN.

Answer: This answer assumes that you are [running qmail-smtpd under tcpserver](#).

Install [serialmail](#) and read `/usr/local/doc/serialmail/AUTOTURN`.

AutoTURN works with clients that send ETRN. It also works with clients that don't send ETRN.

How do I set up qmail-pop3d? My old POP server works with mbox delivery; I'd like to switch to maildir delivery.

Answer: Install [ucspi-tcp](#) and [checkpassword](#). Put

```
tcpserver 0 110 /var/qmail/bin/qmail-popup YOURHOST \  
/bin/checkpassword /var/qmail/bin/qmail-pop3d Maildir &
```

(on two lines) into your system boot scripts; replace YOURHOST with your host's fully qualified domain name. Set up Maildir delivery for any user who wants to read mail via POP. The new service will start after you reboot.

Security note: You should do this only within a secure network; otherwise an eavesdropper can steal passwords.

There are several programs that can be substituted for checkpassword. See <http://cr.yip.to/qmail/toaster.html> for more information.

How do I set up qmail-qmqpd? I'd like to allow fast queueing of outgoing mail from authorized clients.

Answer: Install [ucspi-tcp](#). Create `/etc/qmqp.tcp` in tcprules format to allow connections from authorized hosts. For example, if queueing is allowed from 1.2.3.*:

```
1.2.3.:allow  
:deny
```

Convert `/etc/qmqp.tcp` to `/etc/qmqp.cdb`:

```
tcprules /etc/qmqp.cdb /etc/qmqp.tmp < /etc/qmqp.tcp
```

Put the line

```
tcpserver -x /etc/qmqp.cdb -u 7770 -g 2108 0 628  
/var/qmail/bin/qmail-qmqpd &
```

into your system boot scripts; replace 7770 with your qmaild uid, and replace 2108 with your nofiles gid. Don't forget the &. The new service will start after you reboot.

How do I set up qmail-qmtpd?

Answer: Install [ucspi-tcp](#). Put the line

```
tcpserver -u 7770 -g 2108 0 209 /var/qmail/bin/qmail-qmtpd &
```

into your system boot scripts; replace 7770 with your qmaild uid, and replace 2108 with your nofiles gid. Don't forget the &. The new service will start after you reboot.

How do I record all incoming SMTP traffic?

Answer: This answer assumes that you are [running qmail-smtpd under tcpserver](#), using tcpserver 0.84 or above, with tcpserver's connection messages being sent to syslog.

Simply insert `recordio` before `qmail-smtpd`. SMTP traffic will be sent to syslog.

Configuring UNIX MUAs to work with qmail

How do I make pine use qmail-inject instead of SMTP? I have some Pine users who would like to take advantage of qmail-inject's header-rewriting features.

Answer: Find your system-wide `pine.conf` and put

```
sendmail-path=/usr/lib/sendmail -oem -oi -t
```

into it. (This will work with sendmail too.) Beware that pine is neither secure nor reliable.

How do I make MH use qmail-inject instead of SMTP? I have some MH users who would like to take advantage of qmail-inject's header-rewriting features.

Answer: Put

```
postproc: /usr/mh/lib/spost
```

into each user's `.mh_profile`. (This will work with sendmail too.) Beware that MH is neither secure nor reliable.

Alternatively, install `nmh`, using

```
./configure --with-mts=sendmail
```

before compilation. (This will work with sendmail too.)

How do I make BSD mail/mailx generate a Date with the local time zone? When I send mail, I'd rather use the local time zone than GMT, since some MUAs don't know how to display Date in the receiver's time zone.

Answer: Put

```
set sendmail=/var/qmail/bin/datemail
```

into your `.mailrc` or your system-wide `Mail.rc`. Beware that BSD mail is neither secure nor reliable.

How do I stop Sun's `dcm` from hanging?

Answer: There is a novice programming error in dtcm, known as ``failure to close the output side of the pipe in the child." I do not know whether Sun has fixed this in Solaris 2.7. Sorry.

Administration

How do I tell qmail to read locals and virtualdomains? I just changed the files; qmail-send is still running with the old files.

Answer: Find the qmail-send process and give it a HUP signal. Alternatively, if qmail is [supervised](#):

```
svc -h /service/qmail
```

You can instead [restart qmail](#). qmail-send will read the new files when it starts up.

How do I safely stop qmail-send? Back when we were running sendmail, it was tricky to kill sendmail without risking the loss of current deliveries. What should I do with qmail-send?

Answer: Find the qmail-send process and give it a TERM signal. It will shut down cleanly after current deliveries stop. Wait for ``exiting" to show up in the log. To restart qmail, run `/var/qmail/rc` the same way it is run from your system boot scripts, with the proper PATH, resource limits, etc.

Alternatively, if qmail is [supervised](#):

```
svc -t /service/qmail
```

The supervise process will kill qmail, wait for it to stop, and restart it. Use `-d` instead of `-t` if you don't want qmail to restart automatically; to restart it, use `-u`.

How do I manually run the queue? I'd like qmail to try delivering all the remote messages right now.

Answer: Find the qmail-send process and give it an ALRM signal. Alternatively, if qmail is [supervised](#):

```
svc -a /service/qmail
```

You may want to run `qmail-tcpok` first, to guarantee that `qmail-remote` will try all addresses. Normally, if an address fails repeatedly, `qmail-remote` leaves it alone for an hour.

How do I run a supervised copy of qmail? `svc` sounds useful.

Answer: Install [daemontools](#) version 0.60 or above. Make sure that supervise is in the system startup PATH. Create a /service/qmail directory:

```
mkdir /service/qmail
ln -s /var/qmail/rc /service/qmail/run
```

Change

```
/var/qmail/rc
```

to

```
supervise /service/qmail
```

in your boot scripts. Now you can use svc to stop or restart qmail, and svstat to check whether qmail is running.

How do I avoid syslog? It chews up a lot of CPU time and throws away log entries under high loads.

Answer: Install [daemontools](#) 0.60 or above. Make a /var/log/qmail directory, owned by qmail, mode 2700. Replace

```
splogger qmail
in /var/qmail/rc with
multilog t /var/log/qmail
```

Make sure that multilog is in the system startup PATH.

By default, multilog keeps 10 automatically rotated log files, each containing up to 100KB of log data. To keep 20 files with 1MB each, use `multilog t s1000000 n20 /var/log/qmail`.

If you are logging tcpserver connections, make a /var/log/smtpd directory, and use `multilog /var/log/smtpd` for tcpserver. Don't run two simultaneous multilog processes with the same log directory.

How do I rejuvenate a message? Somebody broke into Eric's computer again; it's going to be down for at least another two days. I know Eric has been expecting an important message---in fact, I see it sitting here in /var/qmail/queue/mess/15/26902. It's been in the queue for six days; how can I make sure it isn't bounced tomorrow?

Answer: Simply touch /var/qmail/queue/info/15/26902.

This is the only form of queue modification that is safe while qmail is running.

How do I keep a copy of all incoming and outgoing mail messages?

Answer: Set QUEUE_EXTRA to "Tlog\0" and QUEUE_EXTRALEN to 5 in extra.h. Recompile qmail. Put ./msg-log into ~alias/.qmail-log.

You can also use QUEUE_EXTRA to, e.g., record the Message-ID of every message: run

```
| awk '/^$/ { exit } /^[mM][eE][sS][sS][aA][gG][eE]-/ { print }'
```

from `~alias/.qmail-log`.

Reliability

What types of filesystems are safe for mail?

Answer: qmail's queue, except for bounce message contents, is crashproof on the BSD FFS and most of its variants.

Do not use `async` or `softupdates` filesystems. If you do, and if your system crashes at the wrong moment, you will lose mail. Under Linux, make sure that all mail-handling filesystems are mounted `sync`. The same comments apply to many other popular MTAs. (However, some MTAs are unreliable no matter what filesystem you use.)

It is safe to put qmail's queue on a `noatime` filesystem.

You may encounter people who dispute one or more of the above statements. Those people don't know what they're talking about. A rather spectacular example appeared in February 2001, when someone wrote hundreds of lines of text in a dozen messages claiming that my FAQ was "totally incorrect," claiming that the BSD FFS wrote data to disk in the wrong order, claiming that the BSD FFS was not crashproof, and claiming that qmail was not crashproof. He put a tremendous amount of effort into making his claims sound authoritative. "I think there *might* be a dozen people in the world that understand UFS/FFS better than I do, but none of them have posted to this thread," he said. He repeatedly claimed that his assertions were well-known facts that had motivated the design of subsequent filesystems. Eventually, after a discussion with two people who understood FFS better than he did, he withdrew his claims and apologized.

How do I back up and restore the queue disk?

Answer: You can't.

One difficulty is that you can't get a consistent snapshot of the queue while `qmail-send` is running. Another difficulty is that messages in the queue must have filenames that match their inode numbers.

However, the big problem is that backups---even hourly backups!---are far too unreliable for mail. If your disk dies, there will be very little overlap between the messages saved in the last backup and the messages that were lost.

There are several ways to add real reliability to a mail server. Battery backups will keep your server alive, letting you park the disk to avoid a head crash, when the power goes out. Solid-state disks have their own battery backups. RAID boxes let you replace dead disks without losing any data.

You may encounter people who dispute one or more of the above statements. Those people don't know what they're talking about. For example, in August 2001, someone claimed that my FAQ was obsolete, because modern disks park themselves. In fact, disks park themselves *when they are idle*. Power outages have a nasty habit of happening when disks are not idle.

Efficiency

How do I tell qmail to do more deliveries at once? It's running only 20 parallel qmail-remote processes.

Answer: Decide how many deliveries you want to allow at once. Put that number into `/var/qmail/control/concurrencyremote` and [restart qmail](#).

Make sure you set the ```descriptors``` or ```openfiles``` resource limit to at least double the concurrency plus 5, and the ```maxproc``` resource limit (if your system has one) to at least the concurrency plus 4. Otherwise qmail will unnecessarily defer deliveries whenever a big burst of mail shows up.

Note that qmail also imposes a compile-time concurrency limit, 120 by default. You can change this in `conf-spawn` at compile time.

Does qmail scale to extremely large queues?

Answer: Yes. qmail-send stores message retry times in a priority queue (using 8 bytes of RAM per queued message---for example, 0.8MB if you have a gigantic queue of 100000 messages) so that it can rapidly find the next message that needs to be delivered.

qmail's queue directories are split into 23 subdirectories, so the operating system's `namei()` searching takes negligible time even when there are thousands of queued messages.

The main limit on queue size is disk space. Each message uses one inode under the qmailq user, a few inodes under the qmails user, and several blocks of data depending on the message size. (If you want to limit the queue size, simply put an inode quota on the qmailq user.)

Does qmail back off from dead hosts?

Answer: Yes. qmail has three backoff features:

- Each message is automatically retried on a quadratic schedule, with longer and longer intervals between delivery attempts.
- If a remote host does not respond to two connection attempts (separated by at least two minutes with no intervening successful connections), qmail automatically leaves the host alone for an hour. At the end of the hour it "slow-starts," allowing one connection through to see whether the host is up.
- Some mailers opportunistically bombard a host with deferred messages as soon as the host comes back online. qmail does *not* do this. Each message waits until the appropriate retry time.