

Getting Started

- **DNS**

Before we begin, make sure DNS (mx record) is properly setup. If you were using "jic.com" as your virtual domain, here's how your host lookups would look after setting up dns:

```
[root@mail root]# host -t mx jic.com
```

```
jic.com mail is handled by 10 mail.jic.com.
```

```
[root@mail root]# host -t a mail.jic.com
```

```
mail.jic.com has address 192.168.128.108
```

- **Remove existing smtp/pop/imap servers**

Now we must remove any existing installations of sendmail/postfix and disable pop/imap servers. To remove sendmail and postfix from an rpm based distribution, try this:

```
service sendmail stop
```

```
rpm -e --nodeps sendmail postfix
```

- **Download packages.**

```
mkdir -p /var/src/tar
```

```
cd /var/src/tar
```

```
wget http://cr.yp.to/daemontools/daemontools-0.76.tar.gz
```

```
wget http://cr.yp.to/ucspi-tcp/ucspi-tcp-0.88.tar.gz
```

```
wget http://shupp.org/software/netqmail-1.05.tar.gz
```

```
wget http://shupp.org/patches/qmail-toaster-0.7.2.patch.bz2
```

```
wget http://shupp.org/software/vpopmail-5.4.10.tar.gz
```

```
wget http://shupp.org/software/autorespond-2.0.4.tar.gz
```

```
wget http://shupp.org/patches/autorespond-2.0.4-2.0.5.patch
```

```
wget http://shupp.org/software/qmailadmin-1.2.3.tar.gz
```

```
wget http://shupp.org/software/qmailadmin-help-1.0.8.tar.gz
```

```
wget http://cr.yp.to/software/ezmlm-0.53.tar.gz
```

```
wget http://shupp.org/software/ezmlm-idx-0.40.tar.gz
```

```
wget http://shupp.org/software/courier-imap-3.0.8.tar.bz2
wget http://shupp.org/software/squirrelmail-1.4.3a.tar.bz2
wget http://shupp.org/software/quota_usage-1.3-1.2.7.tar.gz
wget http://shupp.org/software/toaster-scripts-0.7.tar.gz
wget http://shupp.org/patches/ezmlm-idx-
0.53.400.unified_41.patch

cd ../
tar -xzf tar/netqmail-1.05.tar.gz
cd netqmail-1.05
./collate.sh
```

Install Software

Now that you have downloaded all the software packages to /var/src/tar, please go through each of these installation steps as they appear, and in this order.

- **daemontools**

daemontools is a collection of tools for managing UNIX services. It will monitor qmail-send, and qmail-smtpd, and qmail-pop3d services.

Info: <http://cr.yp.to/daemontools.html>

Install:

```
mkdir -p /package
chmod 1755 /package
cd /package
tar -xpf /var/src/tar/daemontools-0.76.tar.gz
cd admin/daemontools-0.76
patch -p1 < /var/src/netqmail-1.05/other-patches/daemontools-
0.76.errno.patch
package/install
```

To verify that daemontools is running, make sure that `ps ax` reports '/bin/sh /command/svscanboot' and 'svscan /service' as running.

- **ucspi-tcp**

ucspi-tcp contains tcpserver and tcpclient, command line tools for building client-server applications.

Info: <http://cr.yp.to/ucspi-tcp.html>

Install:

```
cd /var/src/  
tar -xzf tar/ucspi-tcp-0.88.tar.gz  
cd ucspi-tcp-0.88  
patch -p1 < /var/src/netqmail-1.05/other-patches/ucspi-tcp-  
0.88.errno.patch  
make  
make setup check
```

- **qmail**

qmail rocks. It's a modern smtp server that makes sendmail obsolete.

Info: <http://www.qmail.org>

The patch you will apply below is a composite of existing patches.

- smtp auth
- spf
- qmail-queue (to allow for virus scanners)
- maildir++ patch
- support oversized dns packets (not necessary if you use dnscache)
- chkuser (check for local users, envelope syntax)
- spam throttle
- qregex (regular expression matching in badmailfrom and badmailto)
- big concurrency (set the spawn limit above 255)

Install:

```
mkdir /var/qmail  
groupadd nofiles  
useradd -g nofiles -d /var/qmail/alias alias  
useradd -g nofiles -d /var/qmail qmaild  
useradd -g nofiles -d /var/qmail qmail
```

```
useradd -g nofiles -d /var/qmail qmailp
groupadd qmail
useradd -g qmail -d /var/qmail qmailq
useradd -g qmail -d /var/qmail qmailr
useradd -g qmail -d /var/qmail qmails
```

```
cd /var/src
tar -xzf tar/toaster-scripts-0.7.tar.gz
cd netqmail-1.05/netqmail-1.05/
```

```
# NOTE: RedHat/Fedora users may need to link certain include
files for the TLS patch.
# Issue the command below only if make fails:
ln -s /usr/kerberos/include/com_err.h /usr/kerberos/include/krb5.h
/usr/kerberos/include/profile.h /usr/include/
# as well as remove the sendmail link if it still exists:
rm /usr/sbin/sendmail
```

```
make
make setup check
# NOTE: qmail will be patched AFTER vpopmail is installed
```

```
# turn on SPF checking
echo 3 > /var/qmail/control/spfbehavior
```

```
# Setup the primary administrator's email address.
# This address will receive mail for root, postmaster, and mailer-
daemon.
# Replace "admin@example.com" with your email address
(cd ~alias; echo "admin@example.com" > .qmail-postmaster ;\
echo "admin@example.com" > .qmail-mailer-daemon ;\
echo "admin@example.com" > .qmail-root )
chmod 644 ~alias/.qmail*
```

```
# on the next line replace "full.hostname" with the hostname of
your mail server
./config-fast full.hostname
```

Configure:

```
# add qmail man pages to MANPATH
```

- Edit /etc/man.config
- Add "MANPATH/var/qmail/man"

```
cd /var/src
```

```
cp toaster-scripts-0.7/rc /var/qmail/rc
chmod 755 /var/qmail/rc
mkdir /var/log/qmail
echo ./Maildir/ >/var/qmail/control/defaultdelivery
cp toaster-scripts-0.7/qmailctl /var/qmail/bin/
chmod 755 /var/qmail/bin/qmailctl
ln -s /var/qmail/bin/qmailctl /usr/bin
ln -s /var/qmail/bin/sendmail /usr/sbin/sendmail
ln -s /var/qmail/bin/sendmail /usr/lib/sendmail
```

#Now create the supervise directories/scripts for the qmail services:

```
mkdir -p /var/qmail/supervise/qmail-send/log
mkdir -p /var/qmail/supervise/qmail-smtpd/log
mkdir -p /var/qmail/supervise/qmail-pop3d/log
mkdir -p /var/qmail/supervise/qmail-pop3ds/log
cp /var/src/toaster-scripts-0.7/send.run /var/qmail/supervise/qmail-send/run
cp /var/src/toaster-scripts-0.7/send.log.run
/var/qmail/supervise/qmail-send/log/run
cp /var/src/toaster-scripts-0.7/smtpd.run
/var/qmail/supervise/qmail-smtpd/run
cp /var/src/toaster-scripts-0.7/smtpd.log.run
/var/qmail/supervise/qmail-smtpd/log/run
cp /var/src/toaster-scripts-0.7/pop3d.run
/var/qmail/supervise/qmail-pop3d/run
cp /var/src/toaster-scripts-0.7/pop3d.log.run
/var/qmail/supervise/qmail-pop3d/log/run
cp /var/src/toaster-scripts-0.7/pop3ds.run
/var/qmail/supervise/qmail-pop3ds/run
cp /var/src/toaster-scripts-0.7/pop3ds.log.run
/var/qmail/supervise/qmail-pop3ds/log/run
echo 20 > /var/qmail/control/concurrencyincoming
chmod 644 /var/qmail/control/concurrencyincoming
chmod 755 /var/qmail/supervise/qmail-send/run
chmod 755 /var/qmail/supervise/qmail-send/log/run
chmod 755 /var/qmail/supervise/qmail-smtpd/run
chmod 755 /var/qmail/supervise/qmail-smtpd/log/run
chmod 755 /var/qmail/supervise/qmail-pop3d/run
chmod 755 /var/qmail/supervise/qmail-pop3d/log/run
chmod 755 /var/qmail/supervise/qmail-pop3ds/run
chmod 755 /var/qmail/supervise/qmail-pop3ds/log/run
mkdir -p /var/log/qmail/smtpd
mkdir -p /var/log/qmail/pop3d
mkdir -p /var/log/qmail/pop3ds
chown -R qmail /var/log/qmail
```

```
#allow daemontools to start qmail
ln -s /var/qmail/supervise/qmail-send /var/qmail/supervise/qmail-
smtpd /service
```

```
#verify that it's running with qmailctl
sleep 5
qmailctl stat
```

- **Vpopmail**

Vpopmail is a virtual domain package add-on for qmail. It can handle multiple domains on a single IP address, and none of the user accounts are /etc/passwd or "system" accounts.

Info: <http://vpopmail.sf.net>

Install:

```
groupadd -g 89 vchkw
useradd -u 89 -g vchkw vpopmail
```

```
cd /var/src
tar -xzf tar/vpopmail-5.4.10.tar.gz
cd vpopmail-5.4.10
```

```
./configure --enable-logging=v
make
make install-strip
echo '127.:allow,RELAYCLIENT=""' > ~vpopmail/etc/tcp.smtp
(cd ~vpopmail/etc ; tcprules tcp.smtp.cdb tcp.smtp.tmp < tcp.smtp)
```

```
# install the vpopmail start script
cp ../toaster-scripts-0.7/vpopmailctl /var/qmail/bin/vpopmailctl
```

```
chmod 755 /var/qmail/bin/vpopmailctl
ln -s /var/qmail/bin/vpopmailctl /usr/bin
```

```
# add qmail toaster patch now that vpopmail is installed
cd /var/src/netqmail-1.05/netqmail-1.05
bunzip2 -c ../tar/qmail-toaster-0.7.2.patch.bz2 | patch -p0
```

```
make clean
make
qmailctl stop
make setup check
```

*# NOTE: the following command needs to be run after any future
re-installs of qmail as it will chown this directory back to qmail*

```
chown -R vpopmail:vchkpw /var/qmail/spam
```

```
make cert
# enter your company's information
make tmprsdh
# NOTE: This may take a LONG time
```

*# now add the following line to your crontab via `crontab -e` to
update these temp keys each night*

```
01 01 * * * /var/qmail/bin/update_tmprsdh > /dev/null 2>&1
```

```
# start qmail back up
qmailctl start
```

```
#allow daemontools to start vpopmail
ln -s /var/qmail/supervise/qmail-pop3d /var/qmail/supervise/qmail-  
pop3ds /service
```

```
#verify that it's running with vpopmailctl
sleep 5
vpopmailctl stat
```

-
- **Courier-IMAP**
 - refer <http://www.courier-mta.org/authlib/?documentation.html> when you get stuck in authlib

Courier-IMAP will supply IMAP/SIMAP access.

Info: <http://www.inter7.com/courierimap>

Install:

```
cd /var/src
tar -xjf tar/courier-imap-3.0.8.tar.bz2
```

```

cd courier-imap-3.0.8
# build as vpopmail
chown -R vpopmail:vchkpw ./courier-imap-3.0.8
su vpopmail
# configure may take some time...
./configure
# NOTE: RedHat/Fedora users need to add "--with-redhat"

make
exit
make install-strip
make install-configure

cp courier-imap.sysvinit /etc/init.d/courier-imap
chmod 755 /etc/init.d/courier-imap
ln -s ../init.d/courier-imap /etc/rc0.d/K30courier-imap
ln -s ../init.d/courier-imap /etc/rc1.d/K30courier-imap
ln -s ../init.d/courier-imap /etc/rc2.d/S80courier-imap
ln -s ../init.d/courier-imap /etc/rc3.d/S80courier-imap
ln -s ../init.d/courier-imap /etc/rc4.d/S80courier-imap
ln -s ../init.d/courier-imap /etc/rc5.d/S80courier-imap
ln -s ../init.d/courier-imap /etc/rc6.d/K30courier-imap

```

Configure:

Edit /usr/lib/courier-imap/etc/authdaemonrc

- Change authmodulelist="" to authmodulelist="authvchkpw"

Edit /usr/lib/courier-imap/etc/imapd

- Change 'IMAPDSTART=NO' to 'IMAPDSTART=YES'

Edit /usr/lib/courier-imap/etc/imapd-ssl

- Change 'IMAPDSSLSTART=NO' to 'IMAPDSSLSTART=YES'

optional: The first time courier-imap is started, the SSL certificate is first created using "localhost" as the "common name". If you want to change this to match your hostname, you can customize the CN line in /usr/lib/courier-imap/etc/imapd.cnf (and pop3d.cnf of

you choose to use courier's pop3d) so that the common name matches
your server name BEFORE you start the server for the first time

Start IMAP server

```
/etc/init.d/courier-imap start
```

- **SquirrelMail**

SquirrelMail is a web based IMAP client

Info: <http://www.squirrelmail.org>

NOTE: This section assumes that your apache ServerRoot is /var/www and that your DocumentRoot is /var/www/html, and also that your web server runs as apache:apache

Install:

```
cd /var/src
tar -xjf tar/squirrelmail-1.4.3a.tar.bz2
cd squirrelmail-1.4.3a
cd plugins
tar -xzf ../tar/quota_usage-1.3-1.2.7.tar.gz
cp quota_usage/config.php.sample
quota_usage/config.php
cd ../
./configure
# here you will have to set a few options:
```

- *go to Server Settings (2) and change the Server Software from "cyrus" to "courier" (a)*
- *From the main menu, go to General Options (4) and change Data Directory (2) to "/var/www/data/"*
- *From the main menu, go to Plugins and enable the quota_usage plugin, along with any others you prefer*
- *Save settings*

- *quit*

move the data directory into place and change permissions to the user:group that the web server runs as:

```
mv data /var/www/  
chown -R apache:apache /var/www/data
```

install squirrelmail

```
cd ../  
mv squirrelmail-1.4.3a /var/www/html/
```

- **autorespond**

Autorespond is compatible autoresponder/vacation type tool that works well with vdelivermail and qmailadmin.

Info: <http://qmailadmin.sf.net>

Install:

```
cd /var/src  
tar -xzf tar/autorespond-2.0.4.tar.gz  
cd autorespond-2.0.4  
patch -p1 < ../tar/autorespond-2.0.4-2.0.5.patch  
make  
make install
```

- **ezmlm-idx**

Fast, full featured Mailing List Manager configureable from qmailadmin.

Info: <http://www.ezmlm.org>

Install:

```
cd /var/src
```

```
tar -xzf tar/ezmlm-0.53.tar.gz
tar -xzf tar/ezmlm-idx-0.40.tar.gz
mv ezmlm-idx-0.40/* ezmlm-0.53/
cd ezmlm-0.53
patch -p0 < idx.patch
patch < ../tar/ezmlm-idx-0.53.400.unified_41.patch
make
make setup
```

- **qmailadmin**

Qmailadmin can handle nearly all virtual email administration tasks for you from a web browser, except for adding and removing virtual domains.

Info: <http://sourceforge.net/projects/qmailadmin>

Install:

```
cd /var/src
tar -xzf tar/qmailadmin-1.2.3.tar.gz
cd qmailadmin-1.2.3
./configure --enable-help
make
make install-strip

cd ../
tar -xzf tar/qmailadmin-help-1.0.8.tar.gz
cd qmailadmin-help-1.0.8
mkdir /var/www/html/images/qmailadmin/help
cp -rp * /var/www/html/images/qmailadmin/help
```

Your toaster installation is done! Now we're ready to take it for a test drive.

Test Drive

Here we'll add a virtual domain, 'test.com', and test sending/receiving mail. Substitut

'test.com' for whatever domain you setup DNS for.

```
# Add the domain to vpopmail
/home/vpopmail/bin/vaddomain test.com [password]
```

This creates the default "postmaster" account for test.com. You will use this account with qmailadmin. Try adding/removing users with qmailadmin here:

```
http://mail.test.com/cgi-bin/qmailadmin
```

To test out quota usage support, create a user with a 6MB quota like so:

```
/home/vpopmail/bin/vadduser -q 6000000000S user@test.com [password]

# verify the user settings, and create the "maildirsize" file
/home/vpopmail/bin/vuserinfo user@test.com
```

Now, to log into SquirrelMail as user@test.com, point your browser here:

```
http://mail.test.com/squirrelmail-1.4.3a/
```

Send yourself a message. If you get it, it's likely you're up and running. To test your POP server, try telnetting to port 110 and logging in.

```
# telnet localhost 110
Trying 127.0.0.1...
Connected to localhost.localdomain.
Escape character is '^]'.
+OK Hello there.
user user@test.com
+OK Password required.
pass [password]
+OK logged in.
quit
+OK Bye-bye.
Connection closed by foreign host.
```

Test your IMAP server in the same way:

```
# telnet localhost 143
Trying 127.0.0.1...
Connected to localhost.localdomain.
Escape character is '^]'.
* OK Courier-IMAP ready. Copyright 1998-2001 Double Precision, Inc.
See COPYING for distribution information.
a001 login user@test.com [password]
```

```
a001 OK LOGIN Ok.
a001 logout
* BYE Courier-IMAP server shutting down
a001 OK LOGOUT completed
Connection closed by foreign host.
```

Options

Here, you can add 3 tools that together will prevent viruses from reaching your system via email.

- **SpamAssassin**

SpamAssassin is the leading open source spam scanner. See <http://www.spamassassin.org> for more details. The easiest way to install SpamAssassin is from CPAN:

```
cd /root
export LANG=en_US
perl -MCPAN -e shell
o conf prerequisites_policy ask
install Mail::SpamAssassin
quit
```

```
# run spamd under daemontools
mkdir -p /var/qmail/supervise/spamd/log
mkdir -p /var/log/spamd
chown qmail /var/log/spamd
cp /var/src/toaster-scripts-0.7/spamd.run /var/qmail/supervise/spamd/run
cp /var/src/toaster-scripts-0.7/spamd.log.run /var/qmail/supervise/spamd/log/run
chmod 755 /var/qmail/supervise/spamd/run
chmod 755 /var/qmail/supervise/spamd/log/run
cp /var/src/toaster-scripts-0.7/local.cf /etc/mail/spamassassin/local.cf
mkdir /etc/mail/spamassassin/.spamassassin/
chown vpopmail /etc/mail/spamassassin/.spamassassin/
ln -s /var/qmail/supervise/spamd /service
```

- **ClamAV**

This open source virus scanner will be called by simscan. For more information, visit <http://clamav.sf.net>

NOTE: You need gmp-devel installed to verify the digital signatures of the virus

database.

```
groupadd clamav
useradd -g clamav clamav
cd /var/src/tar
wget http://shupp.org/software/clamav-0.85.1.tar.gz
wget http://shupp.org/patches/clamav-0.85.1-stderr.patch
wget http://shupp.org/patches/clamav-0.85.1-conf.patch
wget http://shupp.org/patches/clamav-0.85.1-freshclamconf.patch
cd ../
tar -xzf tar/clamav-0.85.1.tar.gz
cd clamav-0.85.1
patch -p0 < ../tar/clamav-0.85.1-stderr.patch
patch -p0 < ../tar/clamav-0.85.1-conf.patch
patch -p0 < ../tar/clamav-0.85.1-freshclamconf.patch
./configure
make
make install
```

```
# setup freshclam
touch /var/log/freshclam.log
chmod 600 /var/log/freshclam.log
chown clamav /var/log/freshclam.log
cp /var/src/toaster-scripts-0.7/freshclam /etc/init.d/freshclam
chmod 755 /etc/init.d/freshclam
ln -s ../init.d/freshclam /etc/rc0.d/K30freshclam
ln -s ../init.d/freshclam /etc/rc1.d/K30freshclam
ln -s ../init.d/freshclam /etc/rc2.d/S80freshclam
ln -s ../init.d/freshclam /etc/rc3.d/S80freshclam
ln -s ../init.d/freshclam /etc/rc4.d/S80freshclam
ln -s ../init.d/freshclam /etc/rc5.d/S80freshclam
ln -s ../init.d/freshclam /etc/rc6.d/K30freshclam
```

```
# run clamd under daemontools
mkdir -p /var/qmail/supervise/clamd/log
mkdir -p /var/log/clamd
chown clamav /var/log/clamd
cp ../toaster-scripts-0.7/clamd.run /var/qmail/supervise/clamd/run
cp ../toaster-scripts-0.7/clamd.log.run /var/qmail/supervise/clamd/log/run
chmod 755 /var/qmail/supervise/clamd/run
chmod 755 /var/qmail/supervise/clamd/log/run
```

```
# Start clamd and freshclam
ln -s /var/qmail/supervise/clamd /service
/etc/init.d/freshclam start
```

- **ripmime**

ripmime is a tool for extracting MIME attachments from email, and is used by qscanq. See <http://www.pldaniels.com/ripmime/> for more details

```
cd /var/src/tar
wget http://shupp.org/software/ripmime-1.4.0.5.tar.gz
cd ..
tar -xzf tar/ripmime-1.4.0.5.tar.gz
cd ripmime-1.4.0.5
make
make install
```

- **simscan**

Your qmail installation is already patched (qmail-queue patch) to support simscan, a new tool for using virus/spam scanners with qmail. The nice thing is that it prevents viruses (and optionally spam) from even getting into your queue. This is different from qmail-scanner, which will quarantine infected messages instead of stopping them at the SMTP level. Go to <http://inter7.com/?page=simscan> for more information.

```
cd /var/src/tar
wget http://shupp.org/software/simscan-1.1.tar.gz
cd ../
tar -xzf tar/simscan-1.1.tar.gz
cd simscan-1.1
```

```
./configure --enable-user=clamav \
--enable-clamav=y \
--enable-spam=y \
--enable-spam-passthru=y \
--enable-per-domain=y \
--enable-ripmime \
--enable-attach=y \
--enable-received=y
```

```
make
make install-strip
```

```
# add default rules for simscan
```

```
echo
```

```
":clam=yes,spam=yes,spam_passthru=yes,attach=.vbs:.lnk:.scr:.wsh:.hta:.pif" >
```

```
/var/qmail/control/simcontrol
```

```
# update /var/qmail/control/simcontrol.cdb
```

```
/var/qmail/bin/simscanmk
```

```
# put versions for received header in /var/qmail/control/simversions.cdb
/var/qmail/bin/simscanmk -g
```

```
# turn on scanning
echo 'allow,QMAILQUEUE="/var/qmail/bin/simscan"' >>
~vpopmail/etc/tcp.smtp
qmailctl cdb
```

- **Qmailadmin Limits**

Qmailadmin can set per domain limits/defaults, which is really useful for hosting companies with different mail packages. This is covered in detail in the `INSTALL` file of qmailadmin (`/var/src/qmailadmin-1.2.3/INSTALL`).