

**A
d
m
i
n
i
s
t
r
a
t
i
o
n**
System
Email, etc.
U n I X

Sendmail

⌘ the most common SMTP agent on the Internet

☒ tends to be quite buggy; several (in)famous security holes rely on sendmail bugs

☒ "Although there are generally valid arguments against early adoption of new versions of critical software, Sendmail may be an exception to the rule."

☒ <http://www.sendmail.org/>

☒ SMTP handshake is quite fun to look at

☒ (next slide)

Sendmail

Admin

on Unix

UNIX

Handshaking With Sendmail

⌘ this is the SMTP (RFC 821) protocol

☑ the telnet 'trick' is useful for debugging

```
% telnet localhost 25
Trying 127.0.0.1...
Connected to localhost.
Escape character is '^]'.
220 redhat.skewst.home.net.au ESMTP Sendmail 8.8.7/8.8.7; Sat, 19 Dec 1998 11:13:15 +1000
HELP
214-This is Sendmail version 8.8.7
214-Topics:
214-   HELO      EHLO      MAIL      RCPT      DATA
214-   RSET      NOOP      QUIT      HELP      VRFY
214-   EXPN      VERB      ETRN      DSN
214-For more info use "HELP <topic>".
214-To report bugs in the implementation send email to
214-   sendmail-bugs@sendmail.org.
214-For local information send email to Postmaster at your site.
214 End of HELP info
HELO localhost
250 redhat.skewst.home.net.au Hello localhost [127.0.0.1], pleased to meet you
MAIL FROM: bob
250 bob... Sender ok
RCPT TO: bob
250 bob... Recipient ok
DATA
354 Enter mail, end with "." on a line by itself
hello bob,

this is a test of sendmail
.
250 LAA00764 Message accepted for delivery
quit
221 redhat.skewst.home.net.au closing connection
Connection closed by foreign host.
```

```
% mail
Mail version 8.1 6/6/93.  Type ? for help.
"/var/spool/mail/bob": 1 message 1 new
>N 1 bob@redhat.skewst.ho Sat Dec 19 11:14 13/426
& p
Message 1:
From bob@redhat.skewst.home.net.au Sat Dec 19 11:14:15 1998
Date: Sat, 19 Dec 1998 11:13:47 +1000
From: Bob Brown <bob@redhat.skewst.home.net.au>

hello bob,

this is a test of sendmail

& d
& q
```


Configuration

⌘ "obscure and difficult to configure"

☒ *allegedly getting better*

☒ *recent versions use the m4 macro processing package to hide away a lot of the simple configuration*

☒ *still remains a really, really, REALLY "black art"*

☒ */etc/sendmail.cf is the main file*

☒ *contains a number of entities*

- *options*

```
O AliasFile=/etc/aliases
O MinFreeBlocks=100
O MaxMessageSize=1000000
O DeliveryMode=background
```

- *header definitions*

- *mailer definitions*

```
Mlocal,          P=/usr/bin/procmail, F=lsDFMAw5:/|@qSPfhn9, S=10/30, R=20/40,
                  T=DNS/RFC822/X-Unix,
                  A=procmail -Y -a $h -d $u
```

- *macro and class definitions*

- *rewriting rule sets*

```
S17
R$* < @ $=w > $: $1 < @ skewst.net.au >
```

- *important file locations*

- *(also see p.636, Frisch)*

☒ *actually defines an "expert system" for handling mail*

More Configuration

⌘ startup

- ⏏ uses the standard rc-file mechanism to call

```
sendmail -bd -qlh
```

- ⏏ *causes sendmail to start as a daemon*
- ⏏ *processes saved messages in the mail queue every hour*

⌘ other uses

- ⏏ testing configuration settings with sendmail -bt

```
% sendmail -bt
ADDRESS TEST MODE (ruleset 3 NOT automatically invoked)
Enter <ruleset> <address>
> 3 bob@redhat
rewrite: ruleset 3 input: bob @ redhat
rewrite: ruleset 96 input: bob < @ redhat >
rewrite: ruleset 96 returns: bob < @ redhat . skewst . home . net . au . >
rewrite: ruleset 3 returns: bob < @ redhat . skewst . home . net . au . >
>
```

- ⏏ direct invocation as a mailer

```
% /usr/sbin/sendmail -v bob < message
bob... Connecting to local...
bob... Sent
```

- ⏏ mail queue status

```
% /usr/sbin/sendmail -bp
Mail Queue (2 requests)
--Q-ID-- --Size-- -----Q-Time----- -----Sender/Recipient-----
PAA00929 32 Sat Dec 19 15:41 bob
(host map: lookup (redhat.x.y): deferred)
bob@redhat.x.y
PAA00924 (no control file)
```


More Mail

⌘ sendmail is an MTA (Mail Transfer Agent)

- ☒ it isn't responsible for working with an MUA (Mail User Agent ["reader" to the rest of us!])
- ☒ there are three main strategies for this:
 - ☒ *retrieve from a disk area*
 - perhaps from an NFS exported filesystem
 - ☒ *use the Post Office Protocol (POP)*
 - used to transfer messages from the server to the client; messages are stored on the client
 - many drawbacks for a user
 - especially a mobile one!
 - ☒ *IMAP (Internet Message Access Protocol)*
 - a replacement for POP
 - IMAP allows users to access their e-mail from different computers without having to download it; messages are always stored on a mail server
 - allows manipulation of the messages on the server, remote creation and deletion of folders on the server, concurrent access to shared mail folders, etc.
 - more secure and offers many benefits to the end user

Aliases

⌘ **/etc/aliases** defines local system specific aliases to recognize and handle

```
# Basic system aliases -- these MUST be present.
MAILER-DAEMON: postmaster
postmaster:    root
```

```
# General redirections for pseudo accounts.
bin:           root
daemon:        root
games:         alan, joe
nobody:        root
system:        root
```

```
# Person who should get root's mail
root:          marc
```

⏏ **sendmail** uses a database constructed from **/etc/aliases** by the **newaliases** command

⊗ **/etc/aliases.db**

⊗ *newaliases* should be run whenever the aliases file is altered to recreate this file

- equivalent to **/usr/sbin/sendmail -bi**

⊗ *the actual name of the aliases file can be defined in **/etc/sendmail.cf***

⌘ **aliases** file is OK for local, static aliases

⏏ for more dynamic lists, **majordomo** is needed

Majordomo

⌘ a Perl script which automates the management of Internet mailing lists via electronic mail

☒ users (and list administrators) send e-mail to Majordomo with instructions in the body of the message, and the Perl script performs the requested actions and responds with the results

- ☒ *(un)subscribe list*
- ☒ *who list, info list*
- ☒ *approve (un)subscribe list address*
- ☒ *newlist list password*
- ☒ *newinfo list password*
- ☒ *etc.*

Configuration Files

- ⌘ configured by `/etc/majordomo.cf` and `/etc/aliases`

```
# abbreviated /etc/majordomo.cf...
chop($whereami = `cat /etc/mailname`);
$whoami = "majordomo@$whereami";
$whoami_owner = "majordomo-owner@$whereami";
if ( defined $ENV{"HOME"} ) {
    $homedir = $ENV{"HOME"};
} else {
    $homedir = "/usr/lib/majordomo";
}
$listdir = "/var/lib/majordomo/lists";
$log = "/var/log/majordomo";

# /etc/aliases entries...
majordomo: "|/usr/local/majordomo/wrapper    /usr/local/majordomo/majordomo"
owner-majordomo: brent

open-list:           :include:/var/lib/majordomo/lists/open-list
open-list-request:   "|/usr/local/majordomo/wrapper    /usr/local/majordomo/request-rec open-list"
open-list-approval:  joe@foobar.com
owner-open-list:      joe@foobar.com

closed-list:         :include:/var/lib/majordomo/lists/closed-list
closed-list-request:  "|/usr/local/majordomo/wrapper    /usr/local/majordomo/request-rec    closed-list"
closed-list-approval: bob@elsewhere.edu
owner-closed-list:    bob@elsewhere.edu
```

- ⌘ also various subsidiary files in each list's own directory

- list.info
- list.passwd
- list.closed

☒ indicates a 'closed' list where subscriptions must be approved

MHonArc

- ⌘ it is often useful to archive all traffic on a list so that people can come back and access it later
- ⌘ MHonArc is a Perl program for converting e-mail messages to HTML

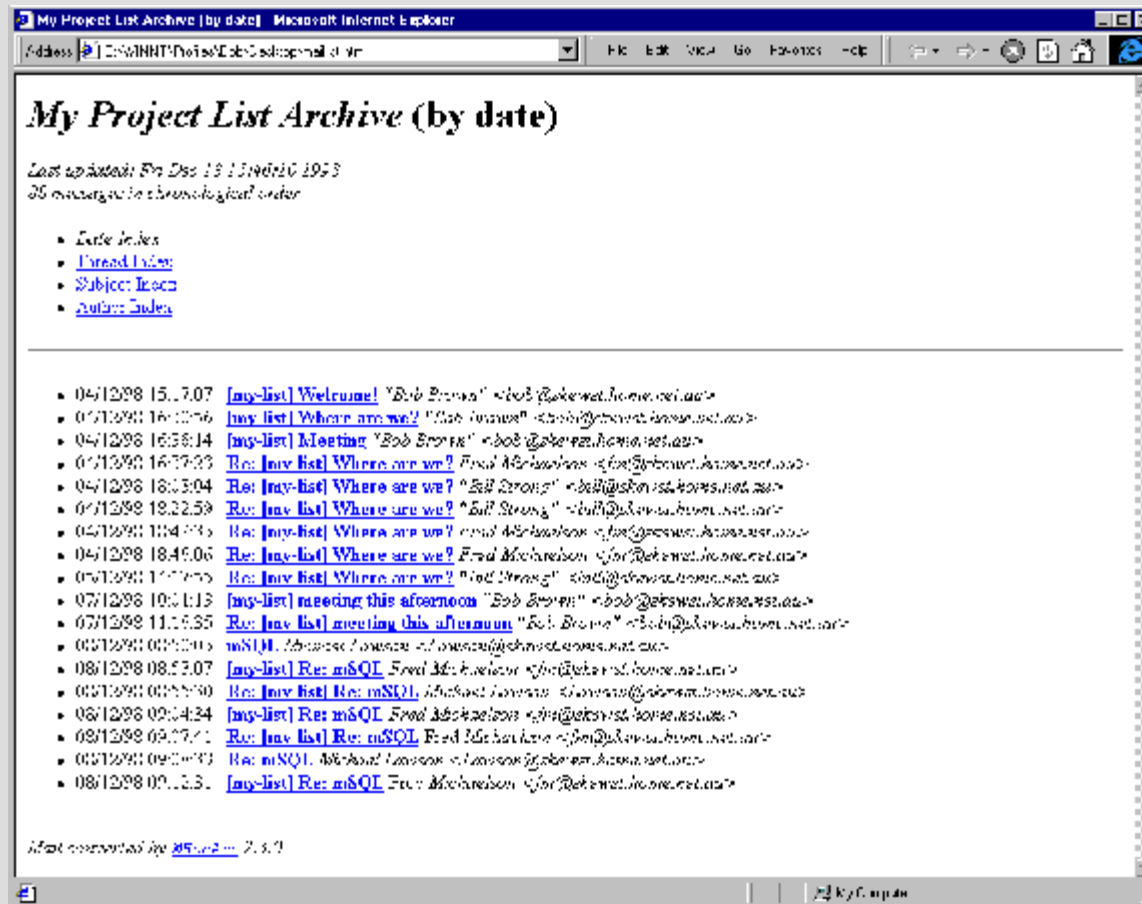
⌘ MHonArc can perform the following tasks:

- ⌘ *convert MH mail folders or UUCP/Unix style mailboxes into an HTML mail archive*
- ⌘ *add or remove messages to an existing HTML mail archive generated by MHonArc*
- ⌘ *convert a single message to HTML*

⌘ along with these tasks, MHonArc provides the following:

- ⌘ *a main customizable index for mail messages archived*
- ⌘ *a customizable thread index listing messages by thread*
- ⌘ *control over message formatting*
- ⌘ *the ability to hook in your own custom message filters*

More MHonArc



```
# from /etc/aliases...
```

```
my-list:"|/usr/local/majordomo/wrapper resend -l my-list -h skewst.home.net.au mylist
```

```
-list-outgoing","|/usr/local/MHonArc2.3.0/bin/mhonarc -rcfile /var/ListArchive/.top.rc -add -quiet -outdir /var/ListArchive/current"
```

```
my-list-outgoing::include:/usr/local/majordomo/mail/lists/my-list
```

```
owner-my-list:bob@skewst.home.net.au
```

```
my-list-request:"|/usr/local/majordomo/wrapper request-answer my-list"
```

```
my-list-approval:bob@skewst.home.net.au
```