
FreeBSD

Korea FreeBSD Users Group – <http://www.kr.FreeBSD.org/>

Chapter 22 :

<rick@rickinc.com> .

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: 2004 8 7
: 2005 3 8
: 1.0

FreeBSD Documentation Project FreeBSD Handbook 2004 8

7 . FreeBSD Handbook ,
, CVS Repository
,
,
가
가 . KFUG(Korea FreeBSD Users Group)
KFUG

“FreeBSD Handbook” “FreeBSD Documentation Project” , “ FreeBSD
” “ (Young-oak Lee)” .

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22

22.1

email

가

FreeBSD

FreeBSD

;

가

B

:

•

가

•

sendmail

FreeBSD

가

•

•

가

•

sendmail

가

•

•

UUCP SMTP

가

•

가

•

-

가

•

SMTP

가

•

mutt

(Mail User

Agent)

가

- POP IMAP 가

-

∴

- (24).

- DNS (24).

- (4)

22.2

5 가 가 . , ,
DNS,

22.2.1

mutt, pine, elm mail balsa,
xfmail GUI WWW .
TCP email
"mailhost" .

22.2.2

FreeBSD sendmail
:

- exim;
- postfix;

- **qmail**

가 .
POP IMAP
mbox Maildir . 가
:
가 **sendmail** 가 .
FreeBSD MTA .

22.2.3 Email DNS

(DNS) named .

DNS .

DNS IP MX
. MX()
MX A
IP .
host(1) MX :

% **host -t mx FreeBSD.org**

FreeBSD.org mail is handled (pri=10) by mx1.FreeBSD.org

22.2.4

가 .
mbox() Maildir
mail(1) **mutt**
POP IMAP 가 .
POP IMAP 가 .

22.2.4.1 POP IMAP

가 POP IMAP . POP IMAP 가
IMAP

가 :

- IMAP 가 .
 - IMAP .
 - IMAP 가 가
- ;
- .

POP IMAP :

IMAP POP . POP IMAP
가 :

- **qpopper;**
- **teapop;**
- **imap-uw;**
- **courier-imap;**

POP IMAP .

POP IMAP /etc/inetd.conf .

: POP IMAP 가

ssh(1) .

14.12.7 .

22.2.4.2

가 MUA
mutt mail(1)

22.2.5

22.3 sendmail

sendmail(8) FreeBSD (MTA) . **sendmail**
(MUA)
sendmail

sendmail :

/etc/mail/access	sendmail
/etc/mail/aliases	(alias)
/etc/mail/local-host-name	sendmail
/etc/mail/mailer.conf	
/etc/mail/mailertable	
/etc/mail/sendmail.cf	sendmail
/etc/mail/virtusertable	가

22.3.1 /etc/mail/access

IP 가
OK, REJECT, RELAY

sendmail

OK 가
 . REJECT . RELAY

가

22-1. sendmail

cyberspammer.com	550 We don't accept mail from spammers
FREE.STEALTH.MAILER@	550 We don't accept mail from spammers
another.source.of.spam	REJECT
okay.cyberspammer.com	OK
128.32	RELAY

5 가 .
 .
sendmail

가

(another.source.of.spam)

cyberspammer.com

okay.cyberspammer.com

128.32. IP

/etc/mail/ make

22.3.2 /etc/mail/aliases

, , 가
 가 . /etc/mail/aliases 가

22-2.

```
root: localuser
ftp - bugs: joe,eric,paul
bit.bucket: /dev/null
procmail: "|/usr/local/bin/procmail"
```

```

;      (:)
root                                localuser
                                localuser
ftp - bugs   가      3
joe, eric   paul                                user@example.com
                                                /dev/null
                                                /usr/local/bin/procmail
                                                /etc/mail/      make

```

22.3.3 /etc/mail/local - host - names

```

sendmail(8)
sendmail                                가
example.com      mail.example.com      local - host -
names           :
```

```
example.com
mail.example.com
```

sendmail(8)

22.3.4 /etc/mail/sendmail.cf

```

sendmail      sendmail.cf
                                sendmail
```



```

sendmail
.
.
sendmail
/usr/sr/ccontrib/sendmail/cf/README
.
.
sendmail

```

22.3.5 /etc/mail/virtusertable

virtusertable 가 , /etc/mail/aliases

22-3. 가

root@example.com	root
postmaster@example.com	postmaster@noc.example.net
@example.com	joe

```

example.com
(
)
root@example.com root
postmaster@example.com noc.example.net postmaster
example.com 가
joe

```

22.4

FreeBSD MTA () **sendmail**
sendmail
가 MTA
MTA

FreeBSD MTA

22.4.1 MTA

MTA 가 MTA FreeBSD MTA
FreeBSD
MTA **sendmail**
MTA 가
가 /usr/bin/sendmail 가
MTA

22.4.2 sendmail

sendmail 4.5- 4.6-

22.4.2.1 2002/4/4 FreeBSD 4.5-STABLE

(4.5-)

/etc/rc.conf

```
sendmail_enable="NO"
```

sendmail /etc/mail/mailer.conf 가(
) e-mail sendmail

22.4.2.2 2002/4/4

FreeBSD 4.5-STABLE (4.6-

)

sendmail

/etc/rc.conf

```
sendmail_enable="NONE"
```

: sendmail

periodic(8)

sendmail

가

. sendmail

sendmail

sendmail

sendmail

/etc/rc.conf

```
sendmail_enable="NO"
```

sendmail

rc.sendmail(8)

22.4.3.

MTA

MTA

가

FreeBSD

22.4.3.1 2002/4/11

FreeBSD 4.5-STABLE(4.5-

).

/usr/local/etc/rc.d/ root

.sh

가

start stop

```
# /usr/local/etc/rc.d/supermailer.sh start
```

```
stop
```

```
# /usr/local/etc/rc.d/supermailer.sh stop
```

22.4.3.2 2002/4/11 FreeBSD 4.5 - STABLE (4.6-

)

```
FreeBSD /etc/rc.conf
mta_start_script="filename" . filename MTA
```

22.4.4 sendmail

sendmail

```
sendmail 가
MTA sendmail ;
sendmail
/usr/bin/sendmail sendmail
가
FreeBSD mailwrapper(8)
sendmail /etc/mail/mailer.conf
:
```

sendmail	/usr/libexec/sendmail/sendmail
send-mail	/usr/libexec/sendmail/sendmail
mailq	/usr/libexec/sendmail/sendmail
newaliases	/usr/libexec/sendmail/sendmail

```
hoststat    /usr/libexec/sendmail/sendmail
purgestat  /usr/libexec/sendmail/sendmail
```

```
                                (sendmail    )
                                /usr/libexec/sendmail/sendmail          sendmail
mailwrapper                .               .                sendmail
```

```
    sendmail    /usr/local/supermailer/bin/sendmail - compat
/etc/mail/mailer.conf                :
```

```
sendmail    /usr/local/supermailer/bin/sendmail - compat
send - mail /usr/local/supermailer/bin/sendmail - compat
mailq       /usr/local/supermailer/bin/mailq - compat
newaliases  /usr/local/supermailer/bin/newaliases - compat
hoststat    /usr/local/supermailer/bin/hoststat - compat
purgestat   /usr/local/supermailer/bin/purgestat - compat
```

22.4.5

sendmail

MTA

22.5

22.5.1 **hosts** **FQDN** 가?

```
    가
foo.bar.edu     bar.edu     mumble                mumble
                mumble.bar.edu
```

```

        BSD BIND          (resolver)          .          FreeBSD
        BIND
        .          mumble  mumble.foo.bar.edu
root
mumble.bar.edu  mumble.edu
                가          RFC 1535
                /etc/resolv.conf
    
```

```

domain foo.bar.edu
.
search foo.bar.edu bar.edu
    
```

```

RFC 1535          가 "local  public          "
가
    
```

22.5.2 sendmail “mail loops back to myself”

sendmail FAQ :

```

553 MX list for domain.net points back to relay.domain.net
554 <user@domain.net>... Local configuration error
가?
MX          (          relay.domain.net)
          domain.net          . domain.net  /etc/mail/local-
host-names  가  (8.10          /etc/sendmail.cw          ) "Cw
domain.net"(FEATURE(use_cw_file)          ) /etc/mail/sendmail.cf  가
    
```

sendmail FAQ <http://www.sendmail.org/faq/>
FAQ .

22.5.3 - PPP

가?

LAN FreeBSD . FreeBSD LAN
가 . PPP .
가 UUCP .
2 MX Full-time()
가 example.com 가
2 MX example.net
(example.com /etc/mail/sendmail.cf Cw example.com
가):

example.com.	MX	10	example.com.
	MX	20	example.net.

sendmail (example.com)
 . sendmail
2 MX .
(example.net) . 2 MX 1 MX
(example.com) .

:

```
#!/bin/sh
# Put me in /usr/local/bin/pppmyisp
( sleep 60 ; /usr/sbin/sendmail -q ) &
/usr/sbin/ppp -direct pppmyisp
```

sendmail -

qRexample.com . example.com

FreeBSD

가 .

```

>          2  MX          .          1  MX          가
>
>      30          .          1  MX
>      30
>
>
>          가?          root
>
sendmail.cf  "privacy flags"  Opgoaway,restrictqrun  가 .
root 가          가          restrictqrun
          MX
          MX

#  가          MX
#
OwTrue

          .          DNS  "customer.com"
"hostname.customer.com"  가 .  DNS  A  "customer.com"

```

22.5.4

"Relaying

Denied"

가?

FreeBSD 가

sendmail sendmail

POP3 가

“5.7 Relaying Denied”

가 . 가

/etc/mail/relay - domains

ISP IP

. IP 가

:

echo "your.isp.example.com" > /etc/mail/relay - domains

sendmail

ISP /

. 가 가

가 .

```
your.isp.example.com
other.isp.example.net
users - isp.example.org
www.example.org
```

(가 가)

가 . SPAM 가

22.6

22.6.1

/etc/resolv.conf

```

.           FreeBSD           MTA( : sendmail)
.           가           :

●           .           FreeBSD.org

●           .           DNS

IP           가           (           PPP           -           가           ).
           SMTP
           가           가           :

●           DNS           MX           IP           .

●           MX           가           DNS           .

           가           가           .

           :

# hostname
example.FreeBSD.org
# host example.FreeBSD.org
example.FreeBSD.org has address 204.216.27.XX

           <yourlogin@example.FreeBSD.org>
           (sendmail example.FreeBSD.org
           가           ).

           (example.FreeBSD.org)
           hub           :

# host example.FreeBSD.org
example.FreeBSD.org has address 204.216.27.XX

```

example.FreeBSD.org mail is handled (pri=10) by hub.FreeBSD.org

DNS . MX 가 IP
eXchange . MX 가 IP

freefall.FreeBSD.org MX :

freefall	MX	30	mail.crl.net
freefall	MX	40	agora.rdrop.com
freefall	MX	10	freefall.FreeBSD.org
freefall	MX	20	who.cdrom.com

freefall MX 가 . 가 MX 가
MX")가 ("backup
가 .

MX
. ISP .

22.6.2

" (:)
(
*.FreeBSD.org)
username . adduser(8)

. DNS :

```
example.FreeBSD.org A 204.216.27.XX ; Workstation
MX 10 hub.FreeBSD.org ; Mailhost
```

```

A 가
. MX
.
DNS . DNS
DNS DNS ISP
가 가
customer1.org 가 customer1.org
mail.myhost.com DNS
:

```

```
customer1.org MX 10 mail.myhost.com
```

```

customer1.org A
.
Note: A 가 customer1.org ping 가
.
sendmail
. 가 :
```

- FEATURE(use_cw_file) /etc/mail/local-host-names
가 . 8.10 **sendmail**
/etc/sendmail.cw .
- 8.10 **sendmail** /etc/sendmail.cf
/etc/mail/sendmail.cf Cyour.host.com 가 .

22.7 UUCP SMTP

FreeBSD **sendmail**
. UUCP(UNIX-to-UNIX Copy Protocol)

sendmail

```

/etc/mail/sendmail.cf          가          . sendmail      8
                                m4(1)          . m4(1)
/usr/src/usr.sbin/sendmail/cf

```

sendmail

```

CDROM   FreeBSD   가   가   :

```

```
# cd /cdrom/src
```

```
# cat scontrib.?? | tar xzf - -C /usr/src/contrib/sendmail
```

```

. cf          README          m4

```

```

UUCP          가          mailertable

```

```
sendmail      ( )
```

```

.mc          .          /usr/src/usr.sbin/sendmail/cf/cf          가
. foo.mc          sendmail.cf

```

```
:
```

```
# cd /usr/src/usr.sbin/sendmail/cf/cf
```

```
# make foo.cf
```

```
# cp foo.cf /etc/mail/sendmail.cf
```

```

.mc          :

```

```

VERSIONID(' Your version number' ) OSTYPE(bsd4.4)

FEATURE(accept_unresolvable_domains)
FEATURE(nocanonify)
FEATURE(mailertable, `hash -o /etc/mail/mailertable')

define(`UUCP_RELAY', your.uucp.relay)
define(`UUCP_MAX_SIZE', 200000)

```

```
define(' confDONT_PROBE_INTERFACES')
```

```
MAILER(local)
```

```
MAILER(smtp)
```

```
MAILER(uucp)
```

```
Cw    your.alias.host.name
```

```
Cw    youruucpnodename.UUCP
```

```
accept_unresolvable_domains, nocanonify    confDONT_PROBE_INTERFACES
```

```
        DNS
```

```
        . UUCP_RELAY    UUCP
```

```
        .UUCP 가
```

```
        UUCP_RELAY
```

```
        ;    ISP
```

```
        /etc/mail/mailertable
```

```
        가
```

```
        :
```

```
#
```

```
# makemap hash /etc/mail/mailertable.db < /etc/mail/mailertable
```

```
.    uucp - dom:your.uucp.relay
```

```
:
```

```
#
```

```
# makemap hash /etc/mail/mailertable.db < /etc/mail/mailertable
```

```
#
```

```
horus.interface - business.de    uucp - dom:horus
```

```
.interface - business.de    uucp - dom:if - bus
```

```
interface - business.de    uucp - dom:if - bus
```

```
.heep.sax.de    smtp8:%1
```

```
horus.UUCP    uucp - dom:horus
```

```
if - bus.UUCP    uucp - dom:if - bus
```

```
.    uucp - dom:
```

3

가

UUCP

SMTP

```

        .
        UUCP   uucp-neighbor !recipient가
        .UUCP 가
        (.   .   가
        UUCP   .   uucp-dom:   uuname
        UUCP
        DBM
        mailertable   .   mailertable
        :
        :   sendmail   -bt
        .   sendmail   ;
        .   3,0
        (   )
    
```

Ctrl+D

```

% sendmail -bt
ADDRESS TEST MODE (ruleset 3 NOT automatically invoked)
Enter <ruleset> <address>
> 3,0 foo@example.com
canonify      input: foo @ example . com
...
parse        returns: $# uucp-dom $@ your.uucp.relay $: foo < @ example . com .
>
> ^D
    
```

22.8

- 가 가 . 가 :
- 가 send-pr(1)
- ISP
- 가

```

MTA 가
      offloading
      . sendmail postfix
      .
      " "
가
      .
      가
      mail/ssmtp
      . root
      :

```

```

# cd /usr/ports/mail/ssmtp
# make install replace clean

```

```

mail/ssmtp /usr/local/etc/ssmtp/ssmtp.conf 4
:

```

```

root=yourrealemail@example.com
mailhub=mail.example.com
rewriteDomain=example.com
hostname=_HOSTNAME_

```

```

root mail.example.com ( ISP " "
"SMTP" ) ISP

```

```

/etc/rc.conf sendmail_enable="NONE" sendmail

```

```

mail/ssmtp /usr/local/etc/ssmtp
ssmtp

```

```

ssmtp ISP
가

```


22.8

```

IP 가 .
        sendmail
        IP 가 PPP ISP
        가 . ISP example.net,
user bsd.home 가 ISP
relay.example.net .
        가 가 . fetchmail
        (mail/fetchmail) . ISP POP3
PPP /etc/ppp/ppp.linkup
가 :
```

```

MYADDR:
!bg su user -c fetchmail
```

```

        sendmail ( )
        sendmail
/etc/ppp/ppp.linkup fetchmail :
```

```
!bg su user -c "sendmail -q"
```

```

bsd.home user 가 가 . bsd.home user
        .fetchmailrc :
```

```
poll example.net protocol pop3 fetchall pass MySecret
```

```
MySecret user .
```

```

from: sendmail user@bsd.home user@example.net
        sendmail
```

relay.example.net

.mc :

```
VERSIONID(`bsd.home.mc version 1.0')
OSTYPE(bsd4.4)dnl
FEATURE(nouucp)dnl
MAILER(local)dnl
MAILER(smtp)dnl
Cwlocalhost
Cwbsd.home
MASQUERADE_AS(`example.net')dnl
FEATURE(allmasquerade)dnl
FEATURE(masquerade_envelope)dnl
FEATURE(nocanonify)dnl
FEATURE(nodns)dnl
define(`SMART_HOST', `relay.example.net')
Dmbsd.home
define(`confDOMAIN_NAME', `bsd.home')dnl
define(`confDELIVERY_MODE', `deferred')dnl
```

.mc sendmail.cf

sendmail.cf **sendmail**

22.10 SMTP

SMTP

. SMTP **sendmail**

가

[security/cyrus - sasl](#)

. [security/cyrus - sasl](#)

pwcheck

[security/cyrus - sasl](#)

/usr/local/lib/sasl/Sendmail.conf (

) 가 :

```
pwcheck_method: passwd
```

```
sendmail FreeBSD passwd .  
SMTP
```

/etc/make.conf 가 :

```
SENDMAIL_CFLAGS=-I/usr/local/include/sasl1 -DSASL  
SENDMAIL_LDFLAGS=-L/usr/local/lib  
SENDMAIL_LDADD=-lsasl
```

```
        cyrus - sasl          sendmail  
    . sendmail                cyrus - sasl
```

```
        sendmail           :
```

```
# cd /usr/src/usr.sbin/sendmail  
# make cleandir  
# make obj  
# make  
# make install
```

```
/usr/src  
        sendmail          가 .
```

```
sendmail /etc/mail/freebsd.mc
```

```
        ( .mc .  
hostname(1) .mc ) 가 :
```

```
dnl set SASL options
TRUST_AUTH_MECH('GSSAPI DIGEST-MD5 CRAM-MD5 LOGIN')dnl
define('confAUTH_MECHANISMS', `GSSAPI DIGEST-MD5 CRAM-MD5 LOGIN')dnl
define('confDEF_AUTH_INFO', `/etc/mail/auth-info')dnl
```

```

                sendmail
                . pwcheck 가
                .
                /etc/mail    make(1)
                freebsd.cf   .cf          ( .mc
                ).          sendmail.cf    sendmail          make
install restart
/etc/mail/Makefile

                가
/var/log/maillog   가
/etc/rc.conf      가
:
```

```
sasl_pwcheck_enable="YES"
sasl_pwcheck_program="/usr/local/sbin/pwcheck"
```

```

                SMTP_AUTH
SMTP          sendmail
```

22.11

```

                (MUA)
                MUA
                . FreeBSD
```

가 . evolution balsa
; mutt, pine mail ;

22.11.1 mail

mail(1) FreeBSD 가

MUA .

mail POP IMAP
(22.12) fetchmail mbox

mail :

% mail

/var/mail mail 가 . 가

가

가 :

Mail version 8.1 6/6/93. Type ? for help.

"/var/mail/marcs": 3 messages 3 new

>N	1	root@localhost	Mon Mar	8 14:05	14/510	"test"
N	2	root@localhost	Mon Mar	8 14:05	14/509	"user account"
N	3	root@localhost	Mon Mar	8 14:05	14/509	"sample"

mail t

:

& t 1

Message 1:

From root@localhost Mon Mar 8 14:05:52 2004

X-Original-To: marcs@localhost
Delivered-To: marcs@localhost
To: marcs@localhost
Subject: test
Date: Mon, 8 Mar 2004 14:05:52 +0200 (SAST)
From: root@localhost (Charlie Root)

This is a test message, please reply if you receive it.

h t 가
R r mail R
r
(.) 가 :

& R 1

To: root@localhost
Subject: Re: **test**

Thank you, I did get your email.

.
EOT

m
(.)
(.)

& mail root@localhost
Subject: **I mastered mail**

Now I can send and receive email using mail ... :)

.
EOT

mail ? . mail(1)

mail

Note:

mail(1)

. mutt

MUA

mail

converters/mpak

22.11.2 mutt

mutt

가

:

- ;
- PGP ;
- MIME ;
- Maildir ;
-

mutt 가

. mutt

<http://www.mutt.org>

mutt mail/mutt

mail/mutt-devel

mutt

:

% mutt

mutt /var/mail

mutt

mutt 가

```
q:Quit d:Del u:Undel s:Save m:Mail r:Reply g:Group ?:Help
 1 N Mar 09 Super-User ( 1) test
 2 N Mar 09 Super-User ( 1) user account
 3 N Mar 09 Super-User ( 1) sample

-----*Mutt: /var/mail/marcs [Msgs:3 New:3 1.6K]---(date/date)----- (all)-----
```

[22-1.bmp]

Enter . mutt 가

:

```
i:Exit -:PrevPg <Space>:NextPg v:View Attachm. d:Del r:Reply j:Next ?:Help
X-Original-To: marcs@localhost
Delivered-To: marcs@localhost
To: marcs@localhost
Subject: test
Date: Tue, 9 Mar 2004 10:28:36 +0200 (SAST)
From: Super-User <root@localhost>

This is a test message, please reply if you receive it.

-N - 1/1: Super-User test -- (all)
```


[22-2.bmp]

```
mail(1)      mutt      가
              r
              g
              .
              Note: mutt      vi(1)
              가      .muttrc      editor
              m      mutt 가 vi(1)
              vi
mutt      y
```

```
y:Send q:Abort t:To c:CC s:Subj a:Attach file d:Descrip ?:Help
  From: Marc Silver <marcs@localhost>
  To: Super-User <root@localhost>
  Cc:
  Bcc:
  Subject: Re: test
  Reply-To:
  Fcc:
  Security: Clear

-- Attachments
- I 1 /tmp/mutt-bsd-c0hobscQ [text/plain, 7bit, us-ascii, 1.1K]

-- Mutt: Compose [Approx. msg size: 1.1K Atts: 1]-----
```

[22-3.bmp]

```
?      mutt      가      . 가
```

22.11.3 pine

```
pine 가 가 .
: pine ,
. pine
FreeBSD
.pine 가 .
pine mail/pine4 . pine
:
% pine
pine , 가
pine
Enter
가 E . :
```

```
PINE 4.58      GREETING TEXT      No Messages

      <<<This message will appear only once>>>

      Welcome to Pine ... a Program for Internet News and Email

We hope you will explore Pine's many capabilities. From the Main Menu,
select Setup/Config to see many of the options available to you. Also
note that all screens have context-sensitive help text available.

SPECIAL REQUEST: This software is made available world-wide as a public
service of the University of Washington in Seattle. In order to justify
continuing development, it is helpful to have an idea of how many people
are using Pine. Are you willing to be counted as a Pine user? Pressing
Return will send an anonymous (meaning, your real email address will not
be revealed) message to the Pine development team at the University of
Washington for purposes of tallying.

      Pine is a trademark of the University of Washington.

      [ALL of greeting text]
? Help      E Exit this greeting      - PrevPage  Z Print
Ret [Be Counted!]      Spc NextPage
```

[22-4.bmp]

pine inbox |
"MESSAGE INDEX" :

```
PINE 4.58  MAIN MENU  Folder: INBOX  3 Messages

?  HELP          -  Get help using Pine
C  COMPOSE MESSAGE -  Compose and send a message
I  MESSAGE INDEX -  View messages in current folder
L  FOLDER LIST   -  Select a folder to view
A  ADDRESS BOOK  -  Update address book
S  SETUP         -  Configure Pine Options
Q  QUIT         -  Leave the Pine program

Copyright 1989-2003.  PINE is a trademark of the University of Washington.

? Help          P PrevCmd          R RelNotes
O OTHER CMDS > [Index] N NextCmd          K KBlock
```

[22-5.bmp]

Enter

```
PINE 4.58  MESSAGE INDEX  Folder: INBOX  Message 1 of 3 ANS

A  1 Mar  9 Super-User      (471) test
A  2 Mar  9 Super-User      (479) user account
A  3 Mar  9 Super-User      (473) sample

? Help          < FldrList      P PrevMsg          | PrevPage  D Delete      R Reply
O OTHER CMDS > [ViewMsg] N NextMsg          Spc NextPage  U Undelete      F Forward
```

[22-6.bmp]

pine 가 . MUA
r .

```
PINE 4.58 MESSAGE TEXT Folder: INBOX Message 1 of 3 ALL ANS
Date: Tue, 9 Mar 2004 10:28:36 +0200 (SAST)
From: Super-User <root@localhost>
To: marcs@localhost
Subject: test

This is a test message, please reply if you receive it.

[ALL of message]
? Help < MsgIndex P PrevMsg - PrevPage D Delete R Reply
0 OTHER CMDS > ViewAttch N NextMsg Spc NextPage U Undelete F Forward
```

[22-7.bmp]

pine pine pico . pico
vi(1) mail(1)
Ctrl + X . pine

```

PINE 4.58  COMPOSE MESSAGE REPLY  Folder: INBOX  3 Messages
To      : Super-User <root@localhost>
Cc      :
Attchmnt:
Subject : Re: test
----- Message Text -----

I did recieve your message...

^G Get Help  ^X Send      ^R Read File ^Y Prev Pg  ^K Cut Text  ^O Postpone
^C Cancel    ^J Justify   ^W Where is  ^U Next Pg  ^U UnCut Text ^I To Spell
    
```

[22-8.bmp]

pine SETUP .
<http://www.washington.edu/pine/> .

22.12. fetchmail

fetchmail IMAP POP
 IMAP POP . fetchmail [mail/fetchmail](mailto:mail@fetchmail)
 가 :

- POP3, APOP, KPOP, IMAP, ETRN ODMR .
- , SMTP
- .

fetchmail

가 . fetchmail .fetchmailrc
가 .

% chmod 600 .fetchmailrc

.fetchmailrc POP
fetchmail joesoap XXX example.com
joesoap 가 .

```
poll example.com protocol pop3 username "joesoap" password "XXX"
```

POP IMAP

```
poll example.com proto pop3:  
user "joesoap", with password "XXX", is "jsoap" here;  
user "andrea", with password "XXXX";  
poll example2.net proto imap:  
user "john", with password "XXXXX", is "myth" here;
```

fetchmail .fetchmailrc fetchmail (
) -d .

% fetchmail -d 60

fetchmail <http://www.catb.org/~esr/fetchmail/>

22.13 procmail

procmail

```
가 . procmail mail/procmail
      MTA ; MTA
      procmail .forward
가 procmail :
```

```
"|exec /usr/local/bin/procmail || exit 75"
```

```
      procmail
      .procmailrc

      procmailex(5)

      user@example.com
goodmail@example2.com :
```

```
:0
* ^From.*user@example.com
! goodmail@example2.com
```

```
1000 bytes goodmail@example2.com :
```

```
:0
* < 1000
! goodmail@example2.com
```

```
alternate@example.com alternate :
```

```
:0
* ^TOalternate@example.com
alternate
```

```
"Spam" /dev/null :
```



```
:0
^Subject:. *Spam
/dev/null
```

FreeBSD.org

:

```
:0
* ^Sender:.owner - freebsd - /[^@]+@FreeBSD.ORG
{
  LISTNAME=${MATCH}
  :0
  * LISTNAME??^ /[^@]+
  FreeBSD-${MATCH}
}
```