

# 1.113.2

## Operate and perform basic configuration of sendmail

### Weight 4

Linux Professional Institute Certification — 102

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2005 November

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- 1.113.1 Configure and manage inetd, xinetd, and related services [4]
- 1.113.2 **Operate and perform basic configuration of sendmail [4]**
- 1.113.3 Operate and perform basic configuration of Apache [4]
- 1.113.4 Properly manage the NFS, smb, and nmb daemons [4]
- 1.113.5 Setup and configure basic DNS services [4]
- 1.113.7 Set up secure shell (OpenSSH) [4]

# Description of Objective

## 1.113.2 Operate and perform basic configuration of `sendmail` [4]

Candidate should be able to modify simple parameters in `sendmail` configuration files (including the "Smart Host" parameter, if necessary), create mail aliases, manage the mail queue, start and stop `sendmail`, configure mail forwarding and perform basic troubleshooting of `sendmail`. The objective includes checking for and closing open relay on the mailserver. It does not include advanced custom configuration of `Sendmail`.

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# Key files, terms, and utilities include:

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```
/etc/aliases or /etc/mail/aliases
/etc/mail/*
~/.forward
mailq
sendmail
newaliases
```

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# Some Terms

**MUA** — Mail User Agent: a program to read, compose and dispose of email

- ▶ Examples: `mutt` (my favourite), Evolution, Thunderbird, Mozilla mail, Eudora, . . . , and Outlook Express

**MTA** — Mail Transfer Agent: a program that delivers mail and transports it between machines

- ▶ Examples: `sendmail`, `postfix`, `qmail`

**MDA** — Mail Delivery Agent: a program that receives the email message from the MTA and puts it into a local store.

- ▶ Examples: `procmail`, `mail.local` (part of `sendmail`)

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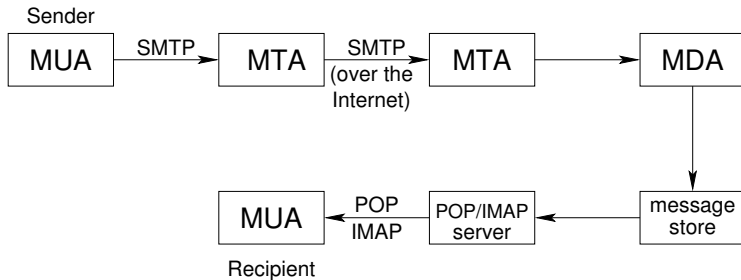
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- sendmail is a MTA (mail transfer agent)



# Main Configuration Files

`/etc/mail/sendmail.mc` The simple human edited configuration file

`/etc/sendmail.cf` The configuration file generated from `sendmail.mc` using the `m4` macro preprocessor

`/etc/mail/aliases` Gives alternative names for users

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# Aliases (thanks to userfriendly.org)

- ▶ Your web site has links to various generic email addresses: `webmaster@acme.com.au`, `sales@acme.com.au`, `tech@acme.com.au`.
- ▶ These should go to real humans; we do this in the `/etc/mail/aliases` file.
- ▶ So if `webmaster` is `aj` and `dustpuppy`, and
- ▶ `greg`, `mike`, `pitr`, `miranda`, `sid` are technical support, and
- ▶ `stef` is `sales`, then we can put these lines into our `/etc/mail/aliases`  
`webmaster: aj, dustpuppy`  
`tech: greg, mike, pitr, miranda, sid`  
`sales: stef`
- ▶ Finally we run  
`$ sudo newaliases ↵`  
or  
`$ sendmail -bi ↵` and now the email will go to the right people.

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# Is Sendmail Configuration like Mr. Dithers Swearing?

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- ▶ Here is a quote from the Second edition of [Sendmail]:

*The lines of text in a `sendmail.cf` file have been described by some as resembling modem noise and by others as resembling Mr. Dithers swearing in the comic strip Blondie.*

`R$+@$=W` ← *sendmail.cf file*

`{$/{{.+` ← *modem noise*

`!@#!@@!` ← *Mr. Dithers swearing*

- ▶ Some have also said that it resembles an **explosion** in a punctuation factory
- ▶ I think they are all correct.
- ▶ Don't edit `sendmail.cf`; just gaze in **awe** and **wonder**.
- ▶ Edit `/etc/mail/sendmail.mc` instead, then, after backing up `sendmail.rc`, do:  

```
# m4 sendmail.mc > sendmail.cf
```

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# SMART\_HOST in sendmail.mc

- ▶ SMART\_HOST: If you send your email through your ISP, or you are behind a firewall and your company mail server is smtp.acme.com.au, then you would put this into your sendmail.mc file:

```
define('SMART_HOST', 'smtp.acme.com.au')
```

- ▶ You would remove any “dn1 ” from the beginning of the line.

- ▶ You would then run m4 as shown before:

```
# m4 sendmail.mc > sendmail.cf ←
```

or

```
$ sudo sh -c 'm4 sendmail.mc > sendmail.cf' ←
```

- ▶ You always need to reload sendmail for it to re-read sendmail.cf:

```
$ sudo service sendmail reload ←
```

- ▶ sendmail will then relay all outgoing email via smtp.acme.com.au

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► You restart `sendmail` the same way as any other service:

► Red Hat:

```
$ sudo service sendmail restart ←
```

► Debian, Ubuntu and Red Hat:

```
$ sudo /etc/init.d/sendmail restart ←
```

# Open Relays

- ▶ If you let anyone use your `sendmail` to relay email, then you are an *open relay*
- ▶ Spammers can use open relays to send their spam to millions of innocents
- ▶ Your mail server domain will end up on a black list
- ▶ You will find that many people cannot receive email from you.
- ▶ If your `sendmail.mc` contains any *one* of the following:  
`FEATURE(promiscuous_relay)`  
`FEATURE(loose_relay_check)`  
`FEATURE(relay_local_from)`  
... then you are an open relay.
- ▶ Turn your mail server off immediately, then read  
<http://www.sendmail.org/tips/relaying.html>

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# The `~/ .forward` file

- ▶ Each user can create a file in their *home directory* to determine whether mail is sent on to a different address:  
`$ echo nicku@nicku.org > ~/ .forward ←`
- ▶ After doing this in my account on a mail server, all email sent to my email address on that mail server would go to my email address `nicku@nicku.org`
- ▶ I wish I could do that with my TAFE mail account, but they run Windows : -)

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# Troubleshooting

- ▶ The log files are in `/var/log/maillog`
- ▶ The command `$ mailq` ← or `$ sendmail -bp` ← show the list of emails that are ready to be sent, but which have not yet been sent
  - ▶ This list should be short, preferably empty
- ▶ The `mailstat` program can summarise the sendmail log files nicely

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# The **AWFUL** security record of sendmail

- ▶ The first known worm on the Internet (the Morris worm) exploited a security flaw in `sendmail`
- ▶ Since then, `sendmail` has had more security flaws than just about any piece of software
- ▶ Before version 8.12, it was a huge mess of code, all running Set User ID to `root`
- ▶ Buffer overflows in the code gave remote `root` access
- ▶ A security nightmare
- ▶ Since 8.12, there have been some separation of code, and the main `sendmail` executable no longer runs SUID `root`, but I still don't trust it.
- ▶ Use `postfix` instead.

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# The wonderful postfix

- ▶ I use and recommend postfix, written carefully with security in mind by Wietse Venema, author of tcpwrappers
- ▶ Configuration easy (no swearing)
- ▶ Written using lots of simple communicating programs ...
  - ▶ rather than the one huge mess that is sendmail
- ▶ ... using minimum privilege required to do the job
- ▶ It is fairly sendmail compatible
- ▶ Ubuntu, Debian, Red Hat and Fedora users can use Debian alternatives to have both postfix and sendmail installed, and select one of them to operate.

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# ... or hold your nose and use `qmail`

- ▶ `qmail` is a well written piece of software, also with much better security than `sendmail`
  - ▶ Almost *any software* has a better security record than `sendmail` :-)
- ▶ Unfortunately, its author, Dan J. Bernstein, does not allow you to redistribute modified copies
- ▶ Therefore it is not free software
- ▶ Therefore I have very little interest in it.

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Resources of interest



Bryan Costales with Eric Allman.  
*Sendmail, Third Edition*  
O'Reilly 2003.



Bryan Costales with Eric Allman.  
*Sendmail, Second Edition*  
O'Reilly January 1997.



**Sendmail Website.**

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



**Sendmail FAQ.**

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



**Allowing controlled SMTP relaying.**

<http://www.sendmail.org/tips/relaying.html>

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