

## 1.113.2

# Operate and perform basic configuration of sendmail Weight 4

Linux Professional Institute Certification — 102

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## Outline

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## 1 Context

### Topic 113 Networking Services [24]

**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]

## 2 Objectives

### Description of Objective

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`.

### Key files, terms, and utilities include:

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

## 3 What is sendmail?

### 3.1 Some Terminology

#### 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

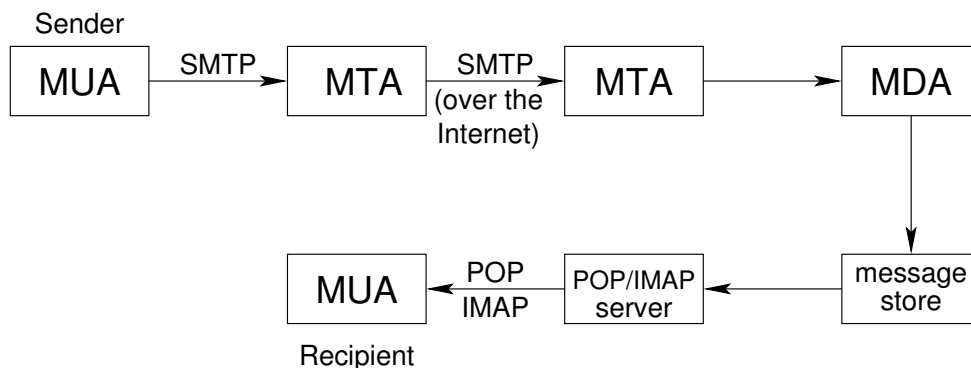
- Examples: `sendmail`, `postfix`, `qmail`

**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`)

#### What is sendmail?

- `sendmail` is a MTA (mail transfer agent)



## 4 Configuring Sendmail

### 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

### 4.1 Aliases

#### Aliases (thanks to [userfriendly.org](http://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.
```

### 4.2 The Big Question

#### Is Sendmail Configuration like Mr. Dithers Swearing?

- 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 ↵
```

### 4.3 Example changing `sendmail.mc`

#### 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`

## 5 Restarting `sendmail`

#### Restarting `sendmail`

- 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 ↵
```

## 6 The Perils of Open Relays

### 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>

## 7 Forwarding and the `~/ .forward` file

### 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 :-)

## 8 Troubleshooting

### 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

## 9 The AWFUL security record of sendmail

### 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.

## 10 Alternatives to sendmail

### 10.1 The fabulous postfix

#### 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.

## 10.2 The less fabulous qmail

### ... 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.

## 11 References

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

### References

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

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

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[Relaying in sendmail] Allowing controlled SMTP relaying. <http://www.sendmail.org/tips/relaying.html>

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