

1.113.2

Operate and perform basic configuration of sendmail Weight 4

Linux Professional Institute Certification — 102

Nick Urbanik <nicku@nicku.org>

This document Licensed under GPL—see section 12

2005 November

Outline

Contents

1	Context	2
2	Objectives	2
3	What is <code>sendmail</code>?	3
3.1	Some Terminology	3
4	Configuring Sendmail	3
4.1	Aliases	4
4.2	The Big Question	4
4.3	Example changing <code>sendmail.mc</code>	5
5	Restarting <code>sendmail</code>	5
6	The Perils of Open Relays	6
7	Forwarding and the <code>~/ .forward</code> file	6
8	Troubleshooting	6
9	The AWFUL security record of <code>sendmail</code>	7

1. Context	1.113.2	2
10	Alternatives to <code>sendmail</code>	7
10.1	The fabulous <code>postfix</code>	7
10.2	The less fabulous <code>qmail</code>	8
11	References	8
12	License Of This Document	8

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

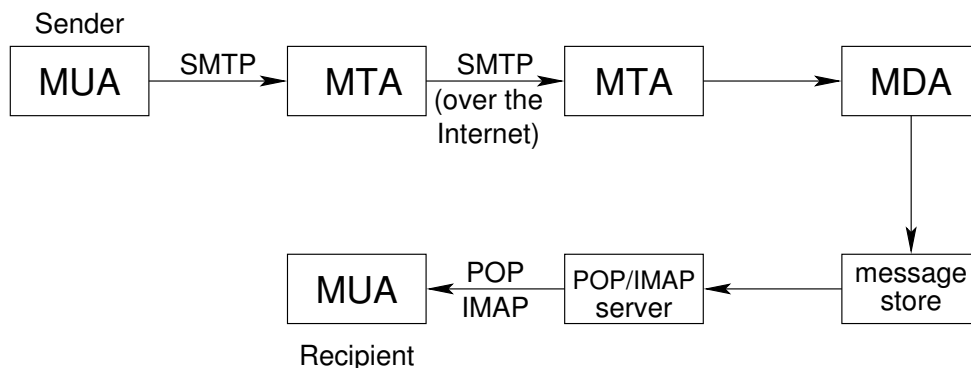
- Examples: `sendmail`, `postfix`, `qmail`

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)

- 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.

[Sendmail website] Sendmail Website. <http://www.sendmail.org/>

[Sendmail FAQ] Sendmail FAQ. <http://www.sendmail.org/faq/>

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

12 License Of This Document

License Of This Document

Copyright © 2005 Nick Urbanik <nicku@nicku.org>

You can redistribute modified or unmodified copies of this document provided that this copyright notice and this permission notice are preserved on all copies under the terms of the GNU General Public License as published by the Free Software Foundation — either version 2 of the License or (at your option) any later version.