The Linux Mail User HOWTO

Table of Contents

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This document is an introduction to the world of electronic mail (email) under Linux. It focuses on user−level issues and typical configurations for Linux home and small−business machines connected to the net via an ISP. You need to read this if you plan to communicate locally or to remote sites via electronic mail. You probably do not need to read this document if don't exchange electronic mail with other users on your system or with other sites. For information on configuring and administering mail, see the Mail Administrator HOWTO.

1.Introduction

2.Mail User Agents

3.Advanced topics

4.Other sources of information

5.Administrivia

1.Introduction

The intent of this document is to explain how email works, and answer some of the questions that appear to meet the definition of `frequently asked questions' about e−mail software under Linux.

Modern Linux distributions give you a usable, preconfigured setup for electronic mail out of the box, usually featuring a late version of sendmail−v8. This HOWTO will assume that you have such a setup and a working Internet connection.

(For information on how to set up a PPP or SLIP link to an ISP, see the ISP Hookup HOWTO.)

Accordingly, unlike Vince Skahan's 1.x versions, this HOWTO focuses on user issues and architecture; most technical hair about UUCP, IDA sendmail and other formerly important topics has been dropped.

1.1 New versions of this document

This document will be posted monthly to the newsgroup comp.os.linux.answers You should also be able to view the latest version of this HOWTO on the World Wide Web at http://metalab.unc.edu/LDP/HOWTO/Mail−User−HOWTO.html.

1.2 Hardware requirements for email programs

There are no specific hardware requirements for mail under Linux. If you have the hardware necessary to connect to the Internet, it can support email over that link.

1.3 Software sources for email programs

The software you will need for email support is probably preinstalled in your Linux distribution. You will find updates on the Metalab Linux Archive, especially in the mail subdirectory.

2.Mail User Agents

This section contains information related to user agents, which means the software the user sees and uses. This software relies on the transport agents described in the Mail Administrator's HOWTO (which also include user=agent configuration and troubleshooting tips for administrators).

2.1 Setting your mail editor

Mail user agents call out to some editor to assist composition of mail. Which editor is the default varies. Most of them respect a convention going back to Unix's early days; the contents of the environment variable VISUAL, if it exists, is taken as the name of your preferred editor. If VISUAL is not set, the variable EDITOR is checked.

Popular values for EDITOR include `vi' and `emacs'. But if you are, like me, the sort who always has an Emacs running, the most useful way to set EDITOR is to the value `emacsclient'. Use this with the following lines in your .emacs file:

```
(autoload 'server-edit "server" nil t)
(server-edit)
```

The emacsclient program, when it runs, tries to establish communication with an Emacs instance you already have running and hand the mail message temporary file to that Emacs to be edited. The effect of this will be that when your mailer calls out for an editor, a mail composition window pops open inside your Emacs.

When you are ready to hand the file back to the mailer for sending, type C−x #. The mail buffer will leave your display and the emacsclient instance your mailer called will return, handing control back to the mailer.

It is possible to have more than one emacsclient instance open at once without confusing Emacs. However, calling up another Emacs while an emacsclient session is running can confuse emacsclient enough that it won't be able to find either instance afterwards. If this happens, shut down all your Emacs instances and restart just one.

2.2 mutt

This is what I use and recommend. It is descended from elm and has similar commands by default, but is much more powerful and configurable. It can be a POP3 or IMAP client, and includes excellent support for MIME and PGP. There is a Mutt home page at http://www.mutt.org.

Mutt respects the EDITOR/VISUAL convention.

2.3 elm

Elm was the first modern, screen−oriented Unix mailer, but has been stagnant for years now and is being displaced by Mutt. Some versions of elm have POP3 support built in. For more information, see the elm sources and installation instructions in the Metalab mail user agents directory. Here are a few points that occasionally trip people up:

No, stock elm is not PGP−aware. There are PGP support patches, but Mutt's PGP support is superior. If you want to use PGP, I recommend Mutt.

Elm respects the EDITOR/VISUAL convention.

2.4 pine

Pine is a user agent designed for novices; it includes news−reading capability and built−in support for the IMAP remote−mail protocol. A lot of people swear by it for new users. I find its impoverished command set, limited configurability and native editor hard to take. It has excellent built−in IMAP support, however. If you want to check it out, the distribution is available at http://www.washington.edu/pine.

Pine respects the EDITOR/VISUAL convention.

2.5 Netscape

The Netscape browser has POP3 and IMAP remote−mail capability built into it, so it can be used as a mail user agent. I don't recommend this; it doesn't specialize in being an MUA, and therefore does not offer many of the services that real MUAs do (such as aliases and PGP handling).

Neetscape supplies its own mini−editor, the same one used throughout the browser (e.g. for text fields in forms).

2.6 Emacs rmail/smail and vm.

Emacs has a mode called smail that can send mail, and another called rmail that can read mail. The smail mode can be quite useful, as you get to compose mail inside a full Emacs environment (but see also the discussion of emacsclient elsewhere in this document).

The rmail mode, on the other hand, is not recommended. Every time you run it, it converts your inbox to BABYL format; ordinary mail tools will choke on that. (If this happens to you, do `M−x unrmail` from the Emacs command line.)

There is a mailreader for emacs called `vm' that writes and reads standard V7 mailboxes. It is not distributed with GNU Emacs, but you can find its home page at http://www.wonderworks.com/vm/.

Emacs smail/rmail/vm do not respect the EDITOR/VISUAL convention. Instead, you use the Emacs they're embedded in.

2.7 BSD mail

If you simply type `mail' to the shell on a Linux or any other modern Unix, you will invoke some variant of the BSD Mail program. It has a line−oriented interface originally designed for use on TTYs. It is, at this point, only of historical interest.

BSD Mail invented the EDITOR/VISUAL convention.

2.8 Other user agents

The following also are known to run under Linux. Consult `archie' to find them...

- mush − mail user's shell, very powerful for filtering and batch processing
- mh − mail handler, yet another mail user agent

I don't know enough about mh or mush to describe them in detail. They both have rather complex interfaces and are designed for sophisticated mail users.

3.Advanced topics

3.1 Aliases

An `alias' is a way to set up a pseudo−address that simply directs mail to another (single) address. There are two kinds of aliases: MUA aliases and MTA aliases.

An MUA alias is one you set up in your MUA as a kind of personal shorthand. Other people will not be able to see or use this alias. For example, you could write

```
alias esr       Eric S. Raymond <esr@thyrsus.com>
```

in your mutt configuration file. This would tell mutt that when it sees `esr' in an address line, it should behave as through you had typed `esr@thyrsus.com', Or you can type `mutt esr' and the expanded address will be automatically filled in on the `to' line.

An MTA alias is one your MTA expands; it will be usable by everyone, both on your machine and remotely. To create MTA aliases you must modify a system file, usually but not always /etc/aliases (the location depends on your MTA). It may be instructive for you to look at the /etc/aliases on your system; it should contain a number of standard aliases such as `postmaster'.

Your MTA may also allow the target of an alias to be a filename, which will be treated as a mailbox the mail is to be appended to (this is useful for archiving mail). It may also allow the target of an alias to be a program, in which case mail to that alias will be passed to an instance of the program on its standard input.

3.2 Forwarding

MTA aliases usually require administrator privileges to set up. But it is desirable for mail users to be able to set up forwarding of their own mail without administrator intervention.

To support this, most MTAs follow sendmail's lead and look for a file called `.forward` in your home directory. The contents of this file is interpreted like the target of an alias which should receive all your mail. The most common use for this facility is to redirect your mail to an account on another machine.

3.3 Auto−answering

Another common use for the `.forward` facility is to pass your mail to a `vacation' program. A vacation program reads incoming mail and automatically generates a canned reply to it; they are so called because the most common form of canned reply is to inform the sender that you are on vacation and will not be reachable until a given date.

There is no one standard vacation program that is in universal use. There are two good reasons for this: one, that such a program is very easy to write as a shellscript of filter rule (see below); and two, that vacation programs interact badly with mailing lists.

You should temporarily unsubscribe from all mailing lists you are on before setting up auto−answering; otherwise, all members of the mailing lists mail find they are being flooded with canned messages by your vacation program. This is considered very rude behavior and will guarantee you quite a frosty reception on your return.

3.4 Mailing lists

A mailing list is a pseudo−address that sends mail to more than one user.

In its simplest form, mailing list is just an MTA alias with more than one recipient. Some small mailing lists are maintained this way. Sendmail assists by supporting a syntax in /etc/aliases that includes the contents of a given mailing list file in the target side of an alias. It looks like this:

```
admin-list:     ":include:/usr/home/admin/admin-list"
```

with the advantage that the admin−list file can live in unprivileged−user space somewhere (root is only needed to set up the original inclusion). Some other MTAs have similar features.

These simple lists are commonly called `mail reflectors'. There are a couple of problems with mail reflectors. One is that bounce messages from failed attempts to broadcast goes to all users. Another is that all subscriptions and unsubscriptions have to be done manually by the mailing list administrator.

A kind of software called a mailing list manager has evolved to address these problems and other related ones. Its most important function is to permit mailing list users to subscribe and unscubscribe without going through the list maintainer.

A mailing−list manager keeps its own user−list information and hooks up to the MTA through a program alias in /etc/aliases. For example, if the admin−list above were going through the mailing list manager called SmartList on a sendmail system, a portion of /etc/aliases might look like this:

```
admin-list: "|/usr/home/smartlist/bin/flist admin-list"
admin-list-request: "|/usr/home/smartlist/bin/flist admin-list-request"
```

Note that this is a pair of aliases. It is conventional for real mailing lists to have a request address to be used for user subscription and unsubscription requests. It is considered rude and ignorant to send subscription/unsubscription requests to the main address of such a list −− don't do it.

The robot sitting behind the request address may offer other features besides just subscription/unsubscription. It may respond to help requests, allow you to query who is on the list, or give you automated access to list archives. It may also allow list administrators to restrict posting to known members, set the list to auto−subscribe nonmembers when they first post, or set various security policy options. Mailing−list managers differ primarily in the design and range of these secondary features.

Unfortunately, the format for sending commands to mailing−list request robots is not standard. Some expect commands in the subject line, some ignore the subject line and expect commands in the message body. You need to pay attention to the response mail you get when you first subscribe; it's a good idea to save such mail to a subscriptions mailbox for later reference.

The most important mailing−list managers to know about are majordomo, listserv, listproc, and smartlist;

majordomo is the most popular by a considerable margin. There is a rather comprehensive list of such packages on the Web.

For more about mailing list managers, consult the resources at the List−Managers Mailing List, including the FAQ (note: this list is *not* appropriate for how−to questions).

3.5 Mail filters

A mail filter is a program that sits between your local delivery agent and you, automatically dispatching or rejecting mail before you see it.

Mail filters have a number of uses. The most important are spam filtering, dispatching to multiple mailboxes by topic or sender, and auto−answering mail.

Typically, you set up mail filtering by putting a program alias for the filter program in your .forward file, and writing a file of filtering rules. The format and location of the filter rules file varies between filter programs.

There are good feature summaries of the three major mail filters (procmail, mailagent, and deliver) in part 3 of Chris Lewis's Email Software Survey. The most popular of these is (despite its rather nasty rule syntax) procmail, which is universally present on Linux systems (and, indeed, is generally used as the system's local delivery agent).

3.6 Coping with spam

Spam is sometimes known as `UCE' (Unsolicited Commercial Email) or `UBE' (Unsolicited Bulk Email). As these names imply, it is an obnoxious form of advertising that stuffs your mailbox with form letters. (The term `spam' comes from a Monty Python's Flying Circus skit in which a choir of Vikings endlessly repeats the chant "Spam spam spam spam...").

Most spam seems to consist of solicitations for pyramid schemes, ads for pornography, or (annoyingly) attempts to sell spam−sending programs. A few individual spams (like MAKE MONEY FAST or the Craig Shergold postcard hoax) have been so persistent as to become legendary. Spam tends to be both verbose and illiterate. It's a waste of time and a huge waste of network bandwidth.

The spam epidemic seems to have peaked in mid−1997 and been slowly in decline since, but it can still be a serious annoyance. If you're being deluged with spam, get educated. Browse the Fight Spam on the Internet! page. The Death To Spam! page is particularly effective on methods for stopping or backtracking spam.

4.Other sources of information

4.1 USENET

There are a number of Usenet groups devoted to electronic−mail technical issues:

- comp.mail.elm the ELM mail system.
- comp.mail.mh The Rand Message Handling system.
- comp.mail.mime Multipurpose Internet Mail Extensions.
- comp.mail.misc General discussions about computer mail.
- comp.mail.multi−media Multimedia Mail.
- comp.mail.mush The Mail User's Shell (MUSH).
- comp.mail.sendmail the BSD sendmail agent.
- comp.mail.smail the smail mail agent.
- comp.mail.uucp Mail in the uucp environment.

4.2 Books

The following is a non−inclusive set of books that will help...

- ``*Sendmail*'' from O'Reilly and Associates is the definitive reference on sendmail−v8 and sendmail+IDA. It's a ``must have'' for anybody hoping to make sense out of sendmail without bleeding in the process.
- "*The Internet Complete Reference*" from Osborne is a fine reference book that explains the various services available on Internet and is a great source for information on news, mail, and various other Internet resources.
- "*The Linux Networking Administrators' Guide*" from Olaf Kirch of the LDP is available on the net and is also published by (at least) O'Reilly and SSC. It makes a fine one−stop shopping guide to learn about everything you ever imagined you'd need to know about Unix networking.

4.3 Periodic USENET Postings

Also worth mentioning, is Chris Lewis' periodic posting on unix e−mail software, which is available on ftp://rtfm.mit.edu/pub/usenet/comp.mail.misc as the files named ``UNIX_Email_Software_Survey_*''. An HTMLized version is at http://www.faqs.org/faqs/mail/setup/unix/. At time writing in 1999 this posting has not been seriously updated since 1996, however.

4.4 Where *NOT* to look for help

There is no longer anything special about configuring and running mail under Linux, relative to other Unixes. Accordingly, you almost certainly do *NOT* want to be posting generic mail−related questions to the comp.os.linux.* newsgroups.

Unless your posting is truly Linux−specific (ie, ``please tell me what routers are already compiled into the SLS1.03 version of smail3.1.28") you should be asking your questions in one of the newsgroups or mailing lists referenced above.

Let me repeat that.

There is virtually no reason to post anything mail−related in the comp.os.linux hierarchy any more. There are existing newsgroups in the comp.mail.* hierarchy to handle *ALL* your questions.

If you post to comp.os.linux. for non−Linux−specific questions, you are looking in the wrong place for help. The electronic mail experts hang out in the places indicated above and generally not in the Linux groups.*

Posting to the Linux hierarchy for non−linux−specific questions wastes your time and everybody else's...and it frequently delays you from getting the answer to your question.

5.Administrivia

5.1 Feedback

(Vince wrote this section, but my policy is the same.)

I am interested in any feedback, positive or negative, regarding the content of this document via e−mail. Definitely contact me if you find errors or obvious omissions.

I read, but do not necessarily respond to, all e−mail I receive. Requests for enhancements will be considered and acted upon based on that day's combination of available time, merit of the request, and daily blood pressure :−)

Flames will quietly go to /dev/null so don't bother.

In particular, the Linux filesystem standard for pathnames is an evolving thing. What's in this document is there for illustration only based on the current standard at the time that part of the document was written and in the paths used in the distributions or `kits' I've personally seen. Please consult your particular Linux distribution(s) for the paths they use.

Feedback concerning the actual format of the document should go to the HOWTO coordinator − mail to linux−howto@metalab.unc.edu).

5.2 Copyright Information

5.3 Standard Disclaimer

Of course, we disavow any potential liability for the contents of this document. Use of the concepts, examples, and/or other content of this document is entirely at your own risk.

5.4 Acknowledgements

This was originally authored by Vince Skahan. I have rewritten it for the modern ISP−centric world in which UUCP is little more than a memory.

In May 1999, the name was changed from "The Linux Electronic Mail HOWTO" to avoid a collision with Guylhem Aznar's Mail HOWTO, which will become the Mail Administrator HOWTO.