

# Mutt & Friends

Stefan Huber

`./know | more @ ccsbg`  
17. Juli 2019

# What is mutt?

`man mutt` says

*mutt - The Mutt Mail User Agent*

`eix -e mutt` in Gentoo says

*A small but very powerful text-based mail client*

`aptitude show mutt` in Debian says

*text-based mailreader supporting MIME, GPG, PGP and threading  
Mutt is a sophisticated text-based Mail User Agent. Some highlights:*

- ▶ *MIME support (including RFC1522 encoding/decoding of 8-bit message headers and UTF-8 support).*
- ▶ *PGP/MIME support (RFC 2015).*
- ▶ *Advanced IMAP client supporting SSL encryption and SASL authentication.*
- ▶ *POP3 support.*
- ▶ *ESMTP support.*
- ▶ *Message threading (both strict and non-strict).*
- ▶ *Keybindings are configurable, default keybindings are much like ELM; Mush and PINE-like ones are provided as examples.*
- ▶ *Handles MMDF, MH and Maildir in addition to regular mbox format.*
- ▶ *Messages may be (indefinitely) postponed.*
- ▶ *Colour support.*
- ▶ *Highly configurable through easy but powerful rc file.*
- ▶ *Support for compressed mailboxes.*
- ▶ *An optional Sidebar.*

# How mutt looks like

```
neomutt: NeoMutt with 1035 messages — Konsole
i:Exit  -:PrevPg <Space>:NextPg v:View Attachm. d:Del r:Reply j:Next ?:Help
INBOX 2/6 55 L Mi 25.07.18 15:51 Tanu Kaskinen <tanuk@iki. ( 2.4K) -->[pulseaudio-discuss] [PATCH paprefs 3/8] README: add "Bug Rep
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Archives [1] 15685 58 L Mi 25.07.18 14:26 Arun Raghavan <arun@arunr ( 681) [pulseaudio-discuss] Updating review policy for trivial patches.
IST 2036 59 L Mi 25.07.18 14:06 Arun Raghavan <arun@arunr ( 2.1K) [pulseaudio-discuss] [ANNOUNCE] WebRTC AudioProcessing v0.3.1
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Sent 8703 63 L Mo 23.07.18 15:19 Arun Raghavan <arun@arunr ( 1.1K) -->
Drafts 0
Junk 1/1869 Date: Wed, 25 Jul 2018 17:56:33 +0530
Trash 0 From: Arun Raghavan <arun@arunraghavan.net>
mu-search 0 To: PulseAudio Discussion <pulseaudio-discuss@lists.freedesktop.org>
Subject: [pulseaudio-discuss] Updating review policy for trivial patches
Reply-To: General PulseAudio Discussion <pulseaudio-discuss@lists.freedesktop.org>

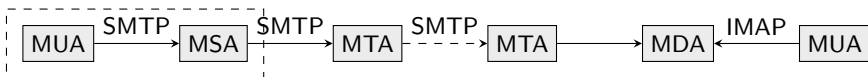
Hi folks,
Given limited review bandwidth, we're moving to a discretionary skipping of review of trivial patches (yes, trivial is
subjective, but hopefully not _too_ subjective 🙄).

I believe that anything that gets missed in these cases can be picked up by those of us reviewing pulseaudio-commits.

Cheers,
Arun

-----
pulseaudio-discuss mailing list
pulseaudio-discuss@lists.freedesktop.org
https://lists.freedesktop.org/mailman/listinfo/pulseaudio-discuss
~
~
- L- 58/1035: Arun Raghavan [pulseaudio-discuss] Updating review policy for trivial patches -- (all)
```

## Background: How E-Mail works



- ▶ The MSA (mail submission agent) listens to the submission port tcp/587 and submissions (submission-over-TLS) port tcp/465, where the MUA (mail user agent) connects to.
- ▶ But often mail clients directly connects to the first MTA (mail transfer agent), which they call the “SMTP server”.  
In some sense, these clients are MUA+MSA in one. In particular, the MSA-part maintain a send queue of mails.
- ▶ The MTA listens to the smtp port tcp/25 and smtps port tcp/465.
- ▶ There might be many hops between MTAs.
- ▶ The receiving MUA typically connects to the MDA (mail delivery agent) through IMAP.<sup>1</sup>

Mutt is really *just* a MUA.

<sup>1</sup> Let POP3 rest in peace. Really.

Neomutt : mutt  $\approx$  neovim : vim

- ▶ The website says: “Teaching an old dog new tricks”
- ▶ Neomutt is a drop-in replacement for mutt.<sup>2</sup>
- ▶ More features:
  - ▶ Improved code quality
  - ▶ Getting patches upstream, like the famous sidebar patch, but more:  
<https://neomutt.org/feature.html>

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<sup>2</sup> I believe this is still true.

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{vim, emacs} : editor  $\approx$  {mutt, (al)pine} : mail client

---

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A MUA like mutt is made for:

- ▶ Managing mail boxes and reading mails.
  - ▶ Mutt may access mails via IMAP.
  - ▶ Mutt may access mails in a maildir directory on your filesystem. You need for instance [offlineimap](#) to fetch your mails.
- ▶ Composing mails:
  - ▶ It fires an external editor, like [vim](#), for the actual composition.
  - ▶ It uses [sendmail](#) or similar to send mails. If you run mutt via ssh on your mail server then you can pass it via a localhost connection.
- ▶ Managing an address book:
  - ▶ You can maintain a so-called alias file or interact with external tools.
  - ▶ However, mutt is no carddav client. You need for instance [vdirsyncer](#) and [khard](#).

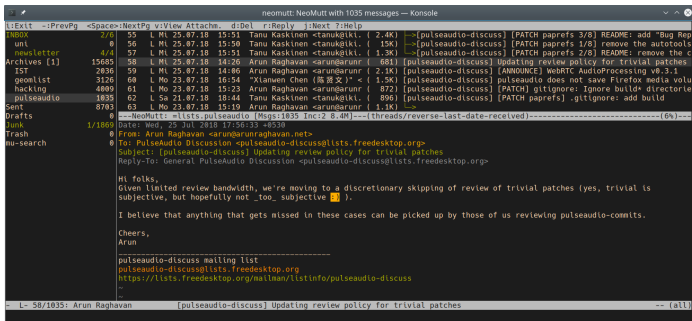
Mutt is strong in interacting with other tools.



<https://neomutt.org/guide/>

Screens and menus:

- ▶ Sidebar
- ▶ Index
- ▶ Pager
- ▶ File Browser, compose menu, alias menu, attachment menu



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Drafts 0 ---NeoMutt: wlists.pulseaudio [Msgs:1835 Inc:2 8.4M]---(threads/reverse-last-date-received)-----[6%]-----
Junk 1/1869 Date: Wed, 25 Jul 2018 17:56:33 +0530
Trash 0 From: Arun Raghavan <arun@arunraghavan.net>
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# The Index

- ▶ Filtering mails
- ▶ Forwarding and bouncing mails
- ▶ Deleting or moving mails
- I have special shortcuts for move-into-archive and move-into-junk
- ▶ Applying operation to multiple mails by *tagging*.
  - ▶ t key toggles the tagged state
  - ▶ Tagging by pattern matching

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Sent 8763 63 L M 23.07.18 15:19 Arun Raghavan <arun@arun. ( 1.1K) --
--noMutt: =lists:pulseaudio (Msg#11835) Inc#2 (3.0M) --[threads/reverse-last-date-received]----- (6%)
junk 1/1869 [Date: Wed, 25 Jul 2018 17:58:33 +0530
From: Arun Raghavan <arun@arun.
To: PulseAudio Discussion <pulseaudio-discuss@lists.freedesktop.org>
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L- 58/1035: Arun Raghavan [pulseaudio-discuss] Updating review policy for trivial patches -- [all]
```

- ▶ Displays the mail.
- ▶ If it is a multipart message then preferably the text/plain part.
- ▶ But it can also display text/html, e.g., using w3m for conversion.

```

() euklid.vpn.sthu.org — Konsole
t:Exit  --:PrevPg <Space>:NextPg v:View Attachm. d:Del r:Reply j:Next ?:Help
3325 T Di 21.02.17 19:21 amd ( 253K) CTS Rechnungsprüfung 2016: Unterlagen und Termi
3326 r C Di 21.02.17 19:57 Peter Meerwald-Stadler ( 603)
3327 T Di 21.02.17 22:24 Jakob R. ( 1.9K)
3328 T Mi 22.02.17 10:39 tla@chaostreff.at ( 961)
3329 r C Mi 22.02.17 11:20 Peter Meerwald-Stadler ( 1.3K)
3330 T Di 28.02.17 14:04 Peter Meerwald-Stadler ( 1.8K)
3331 T Di 28.02.17 14:40 tla@chaostreff.at ( 415)
3332 C Fr 03.03.17 15:15 amd ( 663)
3333 C Mi 08.03.17 10:29 Peter Meerwald-Stadler ( 477)

~%-NeoMutt: ~/.maildir/sthu/Archives [Msgs:75/16875 Flag:2 Inc:4 1431M]---(threads/reverse-last-date-received)
Date: Tue, 21 Feb 2017 19:21:22 +0100
From: amd <amd@chaostreff.at>
To: shuber@sthu.org, pmeerw@pmeerw.net
Cc: tla@chaostreff.at, reissigja+chaosdbg@gmail.com
Subject: CTS Rechnungsprüfung 2016: Unterlagen und Terminfindung

[-- Attachment #1 --]
[-- Type: text/plain; charset=UTF-8, Encoding: quoted-printable, Size: 1.0K --]

Werte Rechnungsprüfer und Anwärter (auf CC),

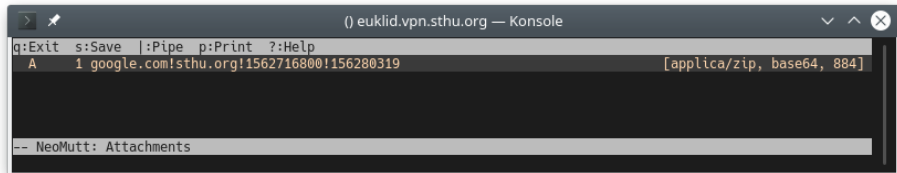
Die Rechnungsprüfung für den CTS steht an und hiermit schicke ich
schonmal die Dokumente vor (-);
Auf CC befinden sich die "zukünftigen" Rechnungsprüfer die unser
Zeremonie beiwohnen werden, auch ihr dürft natürlich die Dokumente
durchsehen und Anmerkungen machen.

- T- 3325/16875: amd CTS Rechnungsprüfung 2016: Unterlagen und Terminfindung -- (31%)

```

# The Attachments

- ▶ Can open attachment with dedicated viewer, like text/html parts with a browser.
- ▶ Can pipe a part into an external tool:  
Importing attached PGP keys: `gpg --import-key`  
Viewing zipped content `zcat | vim -`



The screenshot shows a terminal window titled "() euklid.vpn.sthu.org — Konsole". The terminal content is as follows:

```
q:Exit s:Save |:Pipe p:Print ?:Help
A 1 google.com!sthu.org!1562716800!156280319 [applica/zip, base64, 884]

-- NeoMutt: Attachments
```

## MIME means Multipurpose Internet Mail Extensions

- ▶ Non-ASCII text, e.g. utf-8
- ▶ Non-text attachments, e.g., images, archives, pdfs, ...
- ▶ Multi-part messages, like plain text and HTML

## MIME Content-Type:

- ▶ text/plain
- ▶ text/html
- ▶ application/zip

## `$HOME/.mutt/mailcap:`

```
image/*; xdg-open %s; needsterminal;
text/html; /usr/bin/w3m -I %{charset} -T text/html '%s'; copiousoutput;
    ↪ description=HTML Text; nametemplate=%s.html
text/html; xdg-open '%s'; nametemplate=%s.html; test=test -n "$DISPLAY";
    ↪ needsterminal;
```

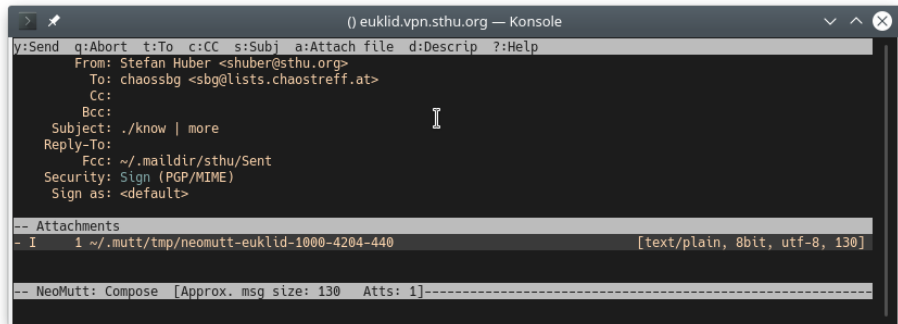
Mutt asks for To: and Subject: and then immediately starts an editor.

- ▶ When entering To: the shortcut C-T performs a name query. It uses an external command for this, like `khard`.
- ▶ Instead of entering full names and addresses, also aliases can be used. The alias file contains the translation to the full name.

```
t/neomutt-euklid-1000-4204-12072495533135093011 buffers
1 From: Stefan Huber <shuber@sthu.org>
2 To: chaossbg <sbg@lists.chaostreff.at>
3 Cc:
4 Bcc:
5 Subject: ./know | more
6 Reply-To:
7
8 Liebe Liste,
9
10 ich verwende vim zum Schreiben von Mails. Die Header oben wurde schon
11 von mutt eingefügt. Speichern und Beenden.

NORMAL > SPELL [DE_AT] +0 -0 -0 / masterZ <-93011 mail utf-8[unix] < 34 words < 100% 11/11 | : 44
```

After composition (exit of editor) this composition menu appears:



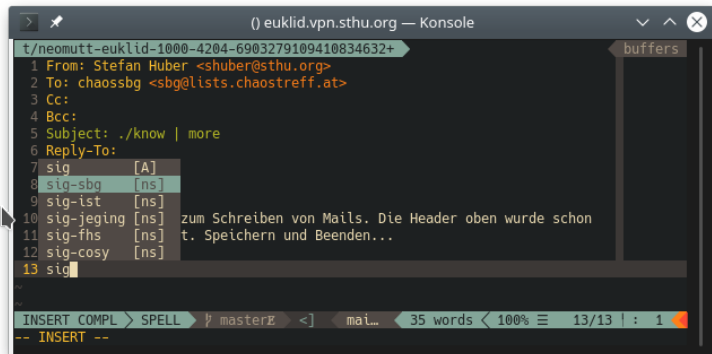
```
() euklid.vpn.sthu.org — Konsole
y:Send q:Abort t:To c:CC s:Subj a:Attach file d:Descrip ?:Help
  From: Stefan Huber <shuber@sthu.org>
  To: chaosbg <sbg@lists.chaostreff.at>
  Cc:
  Bcc:
  Subject: ./know | more
  Reply-To:
  Fcc: ~/.maildir/sthu/Sent
  Security: Sign (PGP/MIME)
  Sign as: <default>

-- Attachments
- I 1 ~/.mutt/tmp/neomutt-euklid-1000-4204-440 [text/plain, 8bit, utf-8, 130]

-- NeoMutt: Compose [Approx. msg size: 130 Atts: 1]-----
```

Vim is powerful:

- ▶ Spell checking
- ▶ Complex text layouts, like tables or paragraph re-wrapping.
- ▶ Syntax highlighting, for instance for source code patches
- ▶ Snippets, e.g., for signatures, well-known mail addresses, or closing formulas.  
lg<C-K> unfolds to Liebe Grüße, Stefan Huber



```
t/neomutt-euklid-1000-4204-6903279109410834632+ buffers
1 From: Stefan Huber <shuber@sthu.org>
2 To: chaossbg <sbg@lists.chaostreff.at>
3 Cc:
4 Bcc:
5 Subject: ./know | more
6 Reply-To:
7 sig [A]
8 sig-sbg [ns]
9 sig-ist [ns]
10 sig-jeging [ns] zum Schreiben von Mails. Die Header oben wurde schon
11 sig-fhs [ns] t. Speichern und Beenden...
12 sig-cosy [ns]
13 sig|

INSERT COMPL > SPELL  masterX < ] mai... 35 words < 100% 13/13 | : 1
-- INSERT --
```



I use mutt in two ways:

- ▶ Via ssh to my mailserver with IMAP connection to localhost.
- ▶ On my laptop with `offlineimap` to sync with a local maildir `$HOME/.maildir/`.
  - ▶ Allows me to access mail when I am offline.
  - ▶ Actually, `offlineimap` accesses two mail accounts (`sth.u.org`, `fh-salzburg.ac.at`), but for mutt it is one maildir.

OfflineIMAP:

- ▶ A very fast, bidirectional IMAP ↔ maildir synchronization software.
- ▶ Quick start: [http://www.offlineimap.org/doc/quick\\_start.html](http://www.offlineimap.org/doc/quick_start.html)
- ▶ Is also handy for migration of a mail account to a different provider or for backup creation.
- ▶ I keep it running in a screen session in the background. A shortcut in mutt triggers a shell script to restart the service.
- ▶ It can use Python code to decide when to synchronize a folder.  
I only check Junk once per hour.<sup>3</sup>

---

<sup>3</sup> See also <https://github.com/OfflineIMAP/offlineimap/commit/561a3d4329d1e1f42849bd9c291ff43c25f431dc>

Addresses are to be managed “in the cloud”:

- ▶ When I add a contact on the mobile phone or in kaddressbook then I want to have it available for mutt, too.
- ▶ I use `davical` on `cal.sthu.org` for `carddav`. Others may use `nextcloud`.
- ▶ Mutt does not connect to a `carddav` server.

`vdirsyncer`:

- ▶ Synchronizes addressbooks<sup>4</sup> between a server and a local repository.<sup>5</sup>
- ▶ A shortcut in mutt triggers `vdirsyncer` on demand.

`khard`:

- ▶ Can access a local `carddav` repository
- ▶ Can query, create, remove, modify, list contacts
- ▶ Mutt uses `khard` to query contacts.

---

<sup>4</sup> And calendars, too.

<sup>5</sup> Or between two servers

## Through SMTP:

- ▶ Mutt can directly connect an SMTP server for sending a mail.
- ▶ If it cannot be reached after a timeout then the mail can be postponed in mutt.
- ▶ However, if you want to send a bunch of mails while offline this gets annoying.

## Through sendmail:

- ▶ If you run mutt via ssh on the mail server then sendmail is provided by it, e.g., postfix.
- ▶ There are lightweight SMTP clients (MSA), like `msmtp`. However, they do not provide a mail queue.  
This is why I wrote `smailq`: <https://www.sthu.org/code/smailq.html>
- ▶ Mutt does not have to wait for a possible timeout if the sendmail implementation takes care for the queuing in the background.

Mutt has a powerful configuration:

- ▶ Shortcuts
- ▶ Appearance of index lines, pager header lines, sidebar lines
- ▶ Colors

I use the *gruvbox* colorscheme in vim:

- ▶ <https://www.sthu.org/code/codesnippets/vimconf.html>
- ▶ There was no working *gruvbox* colorscheme for mutt, so I made one:  
<https://www.sthu.org/code/codesnippets/mutt-gruvbox.html>

Hooks are commands that are executed at certain events:

- ▶ folder-hook, mailbox-hook
- ▶ send-hook, save-hook, pgp-hook

## Folder hook:

- ▶ I use different config files (e.g., index line format, from address, etc.) for different folders, e.g., for mailing lists or university folder.
- ▶ When I switch to a FHS folder then I change my from address, my folders for archive, trash, drafts, sent and junk, which is synced from a different IMAP account.
- ▶ When I switch to an archive or sent folder then I toggle the readonly flag.
- ▶ I disable PGP signing for folders where the from address is not in my key.

## Send hook:

- ▶ When I send to `*@lists.*` then I disable PGP encryption.
- ▶ For certain recipients I explicitly enable or disable PGP encryption.

## PGP hook:

- ▶ Fixing peoples inability to handle their PGP keys.

notmuch:

- ▶ Builds an index and allows me to search in 70k mails very quickly.
- ▶ <https://notmuchmail.org/howto/>
- ▶ Built-in support in neomutt.
- ▶ Can tag mails.
  - ▶ Automatically translates maildir tags to notmuch tags.
  - ▶ Automatically tags signed or encrypted mails by default.
  - ▶ Can be used to create a virtual “unified inbox” over multiple accounts that just lists all mails tagged with new.
- ▶ A postsynhook of offlineimap can be used to trigger a notmuch operations.