# Email With GNUS, Procmail, IMAP, SSH, Mairix

BV

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1 Overview

My email landscape is as shown in the figure below. The "workstation" is on the internal wired network at work and the "laptop" represents either a machine on the wireless network or on a external network. The "infrastructure" represents the facilities on the internal network. Left implicit there is the SSH gateway through which the port forwarding shown as dashed lines happen. Details on these parts are in the sections below.
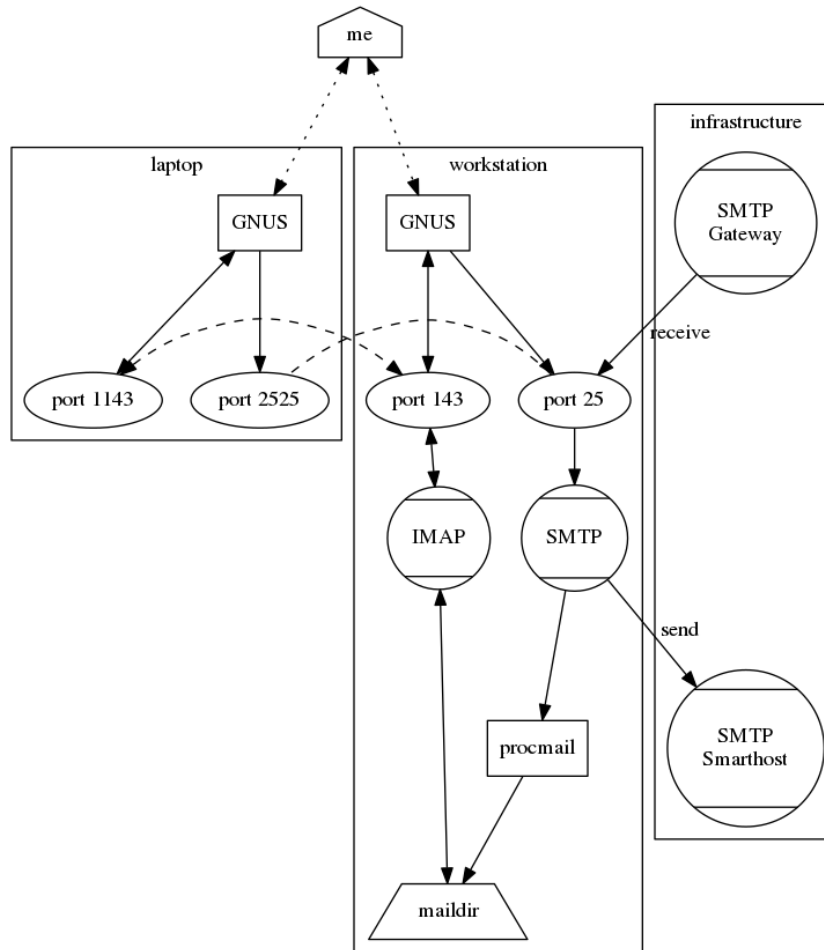
2 SSH Tunnels

Outside of the internal work network I use SSH tunnels to forward local ports to the IMAP and SMTP servers running on the workstation. This is represented by the dashed lines in the figure. I initiate this forwarding on an ad-hoc basis with the command:

```
ssh -L 1143:localhost:143 -L 2525:localhost:25 lycastus
```

The lycastus host is my workstation on the internal network and is not actually directly accessible from external networks. This apparently di-

rect connection succeeds due to an entry in `~/.ssh/config` which implicitly
directs through the department SSH gateway:

```
Host lycastus
  User bviren
  Hostname lycastus.phy.bnl.gov
  HostKeyAlias lycastus.phy.bnl.gov
  ProxyCommand ssh -A bviren@gateway.phy.bnl.gov /bin/nc lycastus.phy.bnl.gov 22
  ...
```

3   Email Client - GNUS

I use GNUS as my email client. It is configured to read email via IMAP so
any client that can speak that protocol could replace GNUS in this setup. In
fact, I've played with Thunderbird in this context. Besides being slow and
not intuitive compared to GNUS, it works (but see 3.1. Technically, GNUS
doesn't send mail but I'm pretending that it does to keep appearances simple.
The network asymmetry between inside and outside the internal network
leads to a dichotomy in the Emacs configuration for GNUS. Since I use the
same Emacs configuration on all accounts I handle this by switching on the
host name:

```
(cond
 ((string= system-name "lycastus.phy.bnl.gov")
  (message "Using BNL")
  (setq gnus-init-file "~/git/dot-emacs/dot-gnus-lycastus.el"
user-mail-address "bv@bnl.gov"))
 (t (message "Using not-BNL")
    (setq gnus-init-file "~/git/dot-emacs/dot-gnus-hal.el"
  user-mail-address "bv@bnl.gov"))
)
```

The "laptop" host (nominally named `hal`) is configured to talk through
these forwarded ports with:

```
(setq gnus-secondary-select-methods
      '((nnimap "bnl"
(nnimap-address "localhost")
(nnimap-server-port 1143)
(nnimap-stream network)
```

```
(nnimap-authenticator login))
))

(setq message-send-mail-function 'smtpmail-send-it
      smtpmail-smtp-server "localhost"
      smtpmail-smtp-service "2525")
```

The "workstation" host's GNUS setup is similar but uses the standard
ports and thus does not require that second stanza.

3.1   TODO Problems with GNUS

Despite being my email client of choice for about a decade, GNUS is not
perfect. In the context of this setup some of the problems that still exist:

- group ordering is kept in files that I do not yet sync between systems.

- outgoing archives are kept local so get scattered, although replies made
  from inside a group should be sent to IMAP

- sharing BBDB

4   Incoming

Email sent to bv@bnl.gov winds through the infrastructure SMTP gate-
way and if it is not obvious SPAM it gets delivered to the workstation
SMTP server. That server (exim4) is configured to key off the existence
of a ~/.procmailrc file to know that instead of normal delivery it should
pipe it through the procmail program run as my user. The configuration of
procmail is best left for another topic but it results in a Maildir directory
hierarchy with many folders. Typically each mailing list to which I belong
is mapped to a subdirectory under ~/Maildir/. In general, mail is sorted
based on its headers either explicitly or through matching (which requires
me to periodically check for new folders as I get subbed to new lists). All
mail that is not matched by procmail falls into a default folder which is
effectively my INBOX.

5   Retrieving

The workstation runs the Dovecot IMAP daemon which is configured to look
at my ~/Maildir/ directory. I used to run Dovecot's imapd as a subprocess

under GNUS in order to avoid supplying my password. This works since GNUS and Dovecot runs on the same system that supplies `~/Maildir/`. However, it would make it challenging (and slow) to do this over SSH. So to keep as much symmetry between "laptop" and "workstation" I moved to running it as a daemon (which is the default for the Debian/Ubuntu installation anyways). This had the nice side effect to slightly increase speed (a real speed boost came from moving `~/Maildir/` to a SSD).

6 Sending

In all cases, mail is sent through the workstation SMTP server (exim4). In the case of originating on the laptop this server is accessed via the SSH tunnels and because of the non-standard port number used in this forwarding Emacs's `smtpmail` needs special configuration as shown above. This SMTP server is configured (as all on the internal network are) to forward email to the site's SMTP "smarthost" (named just `bnl.gov`) for delivery to wherever it is destined.

7 Searching

7.1 Maildir

I used to use notmuch to index my mail in `~/Maildir`. It has nice search capabilities including a nice Emacs UI, however it was rather slow to index. I now use mairix which is blisteringly fast to index - so much so I often wonder if it's doing **anything** (it is).

7.2 IMAP

Gnus has built-in support for using IMAP's search facilities. Just hit `G G` in the Group buffer. The benefit is that it works the same on both laptop and workstation but it's quite a bit slower than `mairix`.

8 Gmail

Gnus can be made to read from Gmail however I've not been able to do so in a way that replicates the features of Gmail's web interface. In particular, I get all the spam, "helpful" commercial email all mixed in to the INBOX. I happen to keep the use of my Gmail and BNL addresses for separate purposes

and keeping how I access the two distinct is acceptable and preferable as it helps to emphasize this separation.