Sample Script of a sendmail install.

Sendmail 8.12.2 on RedHat Linux 7.2

Commands typed by the user are **in bold and slightly larger**
Things of interest and error messages are underlined.
*My comments are in italics.*

The system prompt for this host is set to: [userid@host pwd]
The host name is “grumpy”

Script started on Thu Feb 21 18:15:20 2002

[harold@grumpy harold]$ `cat /etc/issue`

Red Hat Linux release 7.2 (Enigma)
Kernel 2.4.9-21 on an i686

*This install is being done on a clean RedHat Linux version 7.2 system. All patches available on Wednesday, 20 Feb 2002 have been installed before starting this sendmail install.*

[harold@grumpy harold]$ `rpm -q -a | grep sendmail`

sendmail-8.11.6-3
sendmail-cf-8.11.6-3

[harold@grumpy harold]$ `telnet localhost 25`

Trying 127.0.0.1...
Connected to localhost.
Escape character is `^]`.
220 grumpy.ucns.uga.edu ESMTP Sendmail 8.11.6/8.11.6; Thu, 21 Feb 2002 18:16:08 -0500
quit
221 2.0.0 grumpy.ucns.uga.edu closing connection
Connection closed by foreign host.

*As you can see above, the default sendmail installed with RedHat Linux 7.2 is Sendmail 8.11.6. We will be installing The latest version, version 8.12.2.*

[harold@grumpy harold]$ `ftp ftp.sendmail.org`

220 services.sendmail.org FTP server (Version 6.00LS) ready.
Name (ftp.sendmail.org:harold): anonymous
331 Guest login ok, send your email address as password.
Password:
230- This directory contains sendmail 8.x source distributions. Those
230- interested in mirroring the sendmail distribution tree should read
230- the MIRROR file in this directory.
230- The latest version is available in sendmail.8.12.2.tar.{Z,gz,sig} --
the .Z file is compressed, the .gz file is the same bits gzipped, and
the .sig file is a PGP signature for the uncompressed bits in either
of the first two files. Please take ONLY ONE of the .Z or .gz files.

A commercial version of sendmail 8.11 including precompiled `push
button' install and a GUI configuration and administration interface
is available from Sendmail, Inc. (see http://www.sendmail.com/
for details).

Older versions are in sendmail.${VER}.tar.{Z,gz,sig}. Except for the
latest, these are unsupported by the Sendmail.ORG crew. The status of
various interesting ${VER}s is:

- 8.12.2 Portability enhancements and minor bug fixes.
- 8.12.1 Fixes potential local security problem.
- 8.12.0 Enhanced security and performance; no more set-user-ID root.
- 8.11.6 Fixes command line processing security problem.
- Support for STARTTLS and SASL encryption.
- 8.10.2 Detect and avoid a serious Linux capabilities security bug.
- 8.10.1 Bug fix release: avoids dangerous AIX 4.X linker behavior
- 8.10.0 Major new release: multiple queues, SMTP authentication, LDAP
integration, IPv6, enhanced SMTP status codes, and more.
- 8.9.3 header denial of service fixed. Minor fixes.

Since sendmail 8.11 and later includes hooks to cryptography, the
following information from OpenSSL applies to sendmail as well.

PLEASE REMEMBER THAT EXPORT/IMPORT AND/OR USE OF STRONG CRYPTOGRAPHY
SOFTWARE, PROVIDING CRYPTOGRAPHY HOOKS OR EVEN JUST COMMUNICATING
TECHNICAL DETAILS ABOUT CRYPTOGRAPHY SOFTWARE IS ILLEGAL IN SOME
PARTS OF THE WORLD. SO, WHEN YOU IMPORT THIS PACKAGE TO YOUR
COUNTRY, RE-DISTRIBUTE IT FROM THERE OR EVEN JUST EMAIL TECHNICAL
SUGGESTIONS OR EVEN SOURCE PATCHES TO THE AUTHOR OR OTHER PEOPLE
YOU ARE STRONGLY ADVISED TO PAY CLOSE ATTENTION TO ANY EXPORT/IMPORT
AND/OR USE LAWS WHICH APPLY TO YOU. THE AUTHORS ARE NOT LIABLE FOR
ANY VIOLATIONS YOU MAKE HERE. SO BE CAREFUL, IT IS YOUR RESPONSIBILITY.

$Revision: 8.21 $, Last updated $Date: 2002/01/13 19:50:00 $
Guest login ok, access restrictions apply.
Remote system type is UNIX.
Using binary mode to transfer files.

cd pub/sendmail

cd pub/sendmail
250 CWD command successful.

dir
227 Entering Passive Mode (209,246,26,22,200,69)
150 Opening ASCII mode data connection for '/bin/ls'.
total 81460
drwxrwx-x 2 gshapiro sendmail 512 Oct 17 18:54 .alpha
drwxrwx-x 2 gshapiro sendmail 512 Jan 15 04:48 .beta
-rw-rw-r-- 1 gshapiro sendmail 2222 Jan 14 00:09 .message
-rw-rw-r-- 1 gshapiro sendmail 321 Jul 31 2001 FAQ
-rw-rw-r-- 1 gshapiro sendmail 9519 Jan 14 00:09 KNOWNBUGS
-rw-rw-r-- 1 ca sendmail 4117 Sep 8 16:22 LICENSE
-rw-rw-r-- 1 gshapiro sendmail 1510 Jul 31 2001 MIRROR
-rw-rw-r-- 1 ca sendmail 54971 Dec 19 19:10 PGPKEYS
-rw-rw-r-- 1 ca sendmail 426979 Jan 14 00:09 RELEASE_NOTES
ftp> **bin**
200 Type set to I.

ftp> **prompt**
Interactive mode off.

ftp> **get sendmail.8.12.2.tar.gz**
local: sendmail.8.12.2.tar.gz remote: sendmail.8.12.2.tar.gz
227 Entering Passive Mode (209,246,26,22,200,70)
150 Opening BINARY mode data connection for 'sendmail.8.12.2.tar.gz' (1834935 bytes).
226 Transfer complete.
1834935 bytes received in 12 secs (1.5e+02 Kbytes/sec)
ftp> **quit**
221 Goodbye.

[harold@grumpy harold]$ **ls -F**
sendmail.8.12.2.tar.gz

*Extract the sendmail package from the downloaded tar archive file.*

[harold@grumpy harold]$ **tar zxf sendmail.8.12.2.tar.gz**
[harold@grumpy harold]$ **ls -F**
sendmail-8.12.2 sendmail.8.12.2.tar.gz
[harold@grumpy harold]$ **cd sendmail-8.12.2/**

*Now, lets set up a site configuration file to provide for the compilation of sendmail using the CMU Cyrus sasl client server authentication library.*

[harold@grumpy sendmail-8.12.2]$ **cd devtools/Site**
[harold@grumpy Site]$ **vi site.config.m4**
[harold@grumpy Site]$ **cat site.config.m4**
APPENDDEF(`conf_sendmail_ENVDEF', `-DSASL')
APPENDDEF(`conf_sendmail_LIBS', `-lsasl')

*Now, compile the sendmail package*

[harold@grumpy Site]$ **cd ../*
[harold@grumpy sendmail-8.12.2]$ **sh Build**
Making all in:
/home/harold/sendmail-8.12.2/libsm
Configuration: pfx=, os=Linux, rel=2.4.9-21, rbase=2, rroot=2.4, arch=i686, sfx=,
variant=optimized
Using M4=/usr/bin/m4
Creating /home/harold/sendmail-8.12.2/obj/Linux.2.4.9-21.i686/libsm using
/home/harold/sendmail-8.12.2/devtools/OS/Linux
Including /home/harold/sendmail-8.12.2/devtools/Site/site.config.m4
Making dependencies in /home/harold/sendmail-8.12.2/obj/Linux.2.4.9-21.i686/libsm
make[1]: Entering directory `/home/harold/sendmail-8.12.2/obj.Linux.2.4.9-21.1686/libsm'

rm -f sm_os.h

ln -f -s ../../../include/sm/os/sm_os_linux.h sm_os.h

c -M -I. -I./include -DNEWDB assert.c debug.c errstring.c exc.c heap.c
match.c rpool.c strdup.c strcmp.c strl.c clrerr.c feof.c ferror.c
fflush.c fgetc.c fpos.c findfp.c flags.c fopen.c fprintf.c fputc.c fread.c
fscanf.c fseek.c fwrite.c fwalk.c fwrite.c get.c makebuf.c put.c refill.c rewind.c
setvbuf.c smstdio.c snprintf.c sscanf.c stdio.c strio.c ungetc.c vasprintf.c
vfprintf.c vsprintf.f vsprintf.c vsprintf.c vsscanf.c wbuf.c wctime.c
string.c stringf.c xtrap.c strto.c test.c path.c strcasecmp.c strftime.c
clock.c stringf.c xtrap.c strftime.c test.c path.c strcasecmp.c strftime.c

>> Makefile

make[1]: Leaving directory `/home/harold/sendmail-8.12.2/obj.Linux.2.4.9-21.1686/libsm'

Making in /home/harold/sendmail-8.12.2/obj.Linux.2.4.9-21.1686/libsm

make[1]: Entering directory `/home/harold/sendmail-8.12.2/obj.Linux.2.4.9-21.1686/libsm'

cc -O2 -I. -I../../include -DNEWDB -c -o assert.o assert.c

cc -O2 -I. -I../../include -DNEWDB -c -o debug.o debug.c

---------- snip ---------------

Making all in:

/home/harold/sendmail-8.12.2/vacation

Configuration: pfx=, os=Linux, rel=2.4.9-21, rbase=2, rroot=2.4, arch=i686, sfx=,

variant=optimized

Using M4=/usr/bin/m4

Creating /home/harold/sendmail-8.12.2/obj.Linux.2.4.9-21.1686/vacation using

/home/harold/sendmail-8.12.2/devtools/OS/Linux

Including /home/harold/sendmail-8.12.2/devtools/Site/site.config.m4

Making dependencies in /home/harold/sendmail-8.12.2/obj.Linux.2.4.9-21.1686/vacation

make[1]: Entering directory `/home/harold/sendmail-8.12.2/obj.Linux.2.4.9-21.1686/vacation'

rm -f sm_os.h

ln -f -s ../../../include/sm/os/sm_os_linux.h sm_os.h

c -M -I. -I./sendmail -I./include -DNEWDB -DNOT_SENDMAIL vacation.c

>> Makefile

make[1]: Leaving directory `/home/harold/sendmail-8.12.2/obj.Linux.2.4.9-21.1686/vacation'

Making in /home/harold/sendmail-8.12.2/obj.Linux.2.4.9-21.1686/vacation

make[1]: Entering directory `/home/harold/sendmail-8.12.2/obj.Linux.2.4.9-21.1686/vacation'

cc -O2 -I. -I./sendmail -I./include -DNEWDB -DNOT_SENDMAIL -c -o vacation.o vacation.c

groff -Tascii -man vacation.1 > vacation.0 || cp vacation.0.dist vacation.0

make[1]: Leaving directory `/home/harold/sendmail-8.12.2/obj.Linux.2.4.9-21.1686/vacation'

[harold@grumpy sendmail-8.12.2]$ su -
Password:
Now, there are several things we need to do. First is to create the special group and userid used by sendmail 8.12 to own the sendmail process and files. We also need to create a symbolic link so that the install procedure can find the man page directories. RedHat version 7 moved them and sendmail has not yet picked this up.

```
[root@grumpy root]# groupadd -g 25 -r smmsp
[root@grumpy root]# useradd -u 25 -r -g smmsp smmsp
[root@grumpy root]# ln -s /usr/share/man /usr/man
```

Backup the old sendmail executables and configuration files

```
[root@grumpy root]# cd /usr/sbin
[root@grumpy sbin]# cp -p sendmail sendmail.old
[root@grumpy sbin]# cd /etc
[root@grumpy etc]# cp -p sendmail.cf sendmail.cf.old
```

Install the new version of sendmail

```
[root@grumpy etc]# cd ~harold/sendmail-8.12.2/
[root@grumpy sendmail-8.12.2]# sh Build install
Making all in: /home/harold/sendmail-8.12.2/libsm
Configuration: pfx=, os=Linux, rel=2.4.9-21, rbase=2, rroot=2.4, arch=i686, sfx=, variant=optimized
Making in /home/harold/sendmail-8.12.2/obj.Linux.2.4.9-21.i686/libsm
make[1]: Entering directory `/home/harold/sendmail-8.12.2/obj.Linux.2.4.9-21.i686/libsm'
make[1]: Nothing to be done for `install'.
make[1]: Leaving directory `/home/harold/sendmail-8.12.2/obj.Linux.2.4.9-21.i686/libsm'

Making all in: /home/harold/sendmail-8.12.2/vacation
Configuration: pfx=, os=Linux, rel=2.4.9-21, rbase=2, rroot=2.4, arch=i686, sfx=, variant=optimized
Making in /home/harold/sendmail-8.12.2/obj.Linux.2.4.9-21.i686/vacation
make[1]: Entering directory `/home/harold/sendmail-8.12.2/obj.Linux.2.4.9-21.i686/vacation'
install -c -o bin -g bin -m 555 vacation /usr/bin
install -c -o bin -g bin -m 444 vacation.0 /usr/man/man1/vacation.1
make[1]: Leaving directory `/home/harold/sendmail-8.12.2/obj.Linux.2.4.9-21.i686/vacation'

Find and kill the old sendmail

```
[root@grumpy sendmail-8.12.2]# ps ax | grep sendmail
```
978 ? S 0:00 sendmail: accepting connections
18333 pts/1 S 0:00 grep sendmail
[root@grumpy sendmail-8.12.2]# kill 978

Start the new sendmail. This also illustrates that sendmail 8.12 has moved the configuration file from /etc to /etc/mail

[root@grumpy sendmail-8.12.2]# /usr/sbin/sendmail -bd -q1h
451 4.0.0 /etc/mail/sendmail.cf: line 0: cannot open: No such file or directory
[root@grumpy sendmail-8.12.2]# cd ~harold/send-mail-8.12.2/cf/cf
[root@grumpy cf]# cp generic-linux.cf /etc/mail/sendmail.cf
[root@grumpy cf]# /usr/sbin/sendmail -bd -q1h
[root@grumpy cf]# telnet localhost 25
Trying 127.0.0.1...
Connected to localhost.
Escape character is '^]'.
quit
221 2.0.0 grumpy.ucns.uga.edu closing connection
Connection closed by foreign host.

[root@grumpy cf]# ps ax | grep sendmail
18342 ? S 0:00 sendmail: accepting connections
18347 pts/1 S 0:00 grep sendmail

[root@grumpy cf]# cd /etc/mail
[root@grumpy mail]# ls -F
maccess helpfile Makefile submit.cf
maccess.db local-host-names sendmail.cf trusted-users
domaintable mailertable sendmail.mc virtusertable
domaintable.db mailertable.db statistics virtusertable.db

[m[root@grumpy mail]# sendmail -bi
newaliases: cannot open /etc/mail/aliases: No such file or directory
[root@grumpy mail]# mv /etc/aliases /etc/mail
[root@grumpy mail]# sendmail -bi
/etc/mail/aliases: 41 aliases, longest 14 bytes, 413 bytes total

[root@grumpy mail]# mailq
/var/spool/mqueue is empty
Total requests: 0

Now, let's test the new sendmail

[root@grumpy mail]# sendmail -v harold@uga.edu
this is a test
harold@uga.edu... Connecting to localhost via relay...
220 grumpy.ucns.uga.edu ESMTP Sendmail 8.12.2/8.12.2; Thu, 21 Feb 2002 18:33:46 -
0500
>>> EHLO grumpy.ucns.uga.edu
250-grumpy.ucns.uga.edu Hello localhost.localdomain [127.0.0.1], pleased to meet you
250-ENHANCEDSTATUSCODES
250-PIPELINING
250-EXPN
250-VERB
250-8BITMIME
250-SIZE
250-DSN
250-ETRN
250-DELIVERBY
250 HELP
>>> MAIL From:<root@grumpy.ucns.uga.edu> SIZE=15
250 2.1.0 <root@grumpy.ucns.uga.edu>... Sender ok
>>> RCPT To:<harold@uga.edu>
>>> DATA
250 2.1.5 <harold@uga.edu>... Recipient ok
354 Enter mail, end with "." on a line by itself
>>> .
250 2.0.0 g1LNXknU018354 Message accepted for delivery
harold@uga.edu... Sent (g1LNXknU018354 Message accepted for delivery)
Closing connection to localhost
>>> QUIT
221 2.0.0 grumpy.ucns.uga.edu closing connection

Ok, now we’re done unless you need to be able to selectively
relay mail from other sites. To do this, you need to re-build the
sendmail.cf file with this option turned on.

[root@grumpy mail]# cd ~/harold/sendmail-8.12.2/cf/cf
[root@grumpy cf]# cp generic-linux.mc grumpy.mc
[root@grumpy cf]# vi grumpy.mc
[root@grumpy cf]# cat grumpy.mc

--- snip ---
OSTYPE(linux)dnl
DOMAIN(generic)dnl
FEATURE(access_db)dnl
MAILER(local)dnl
MAILER(smtp)dnl

[root@grumpy cf]# make grumpy.cf
rm -f grumpy.cf
m4 ../m4/cf.m4 grumpy.mc > grumpy.cf || ( rm -f grumpy.cf && exit 1 )
chmod 444 grumpy.cf

[root@grumpy cf]# cp grumpy.cf /etc/mail/sendmail.cf
Use the text editor to edit the file /etc/mail/access, adding lines in accordance with the instructions in the README file found in sendmail-8.12.2/cf. In this case, I added one line to the default file, and you can see the results below:

[root@grumpy cf]# cd /etc/mail
[root@grumpy mail]# vi access
[root@grumpy mail]# cat access
# Check the /usr/share/doc/sendmail-8.11.2/README.cf file for a description
# of the format of this file. (search for access_db in that file)
# The /usr/share/doc/sendmail-8.11.2/README.cf is part of the sendmail-doc
# package.
#
# by default we allow relaying from localhost...
localhost.localdomain RELAY
localhost RELAY
127.0.0.1 RELAY
harold.ucns.uga.edu RELAY

[root@grumpy mail]# ps ax | grep sendmail
18342 ? S 0:00 sendmail: accepting connections
18372 pts/1 S 0:00 grep sendmail
[root@grumpy mail]# kill 18342
[root@grumpy mail]# /usr/sbin/sendmail -bd -q1h
[root@grumpy mail]# exit
logout
[harold@grumpy sendmail-8.12.2]$ exit
Script done on Thu Feb 21 18:39:41 2002