

[Credit John Swinbank, Dave Russell & Mike Nowak]

These instructions have been tested on Ubuntu 10.04 (Lucid Lynx) on the AMD64 platform, and on the Netbook version of Ubuntu 10.04 on an Asus Eee PC 1001PX. They were both untouched systems: just the base system with recent updates applied.

This instructions are intended to be read in conjunction with the documentation supplied with the various software packages!

Note that \$ indicates commands which should be typed at a terminal prompt.

Preparation

Install all the required packages from the Ubuntu repository:

```
$ sudo aptitude install g++ gfortran x11proto-core-dev libx11-dev libxt-dev  
libncurses5-dev libslang2-dev slsh slang-slirp
```

S-Lang Stats Module

For S-lang we require the [stats module](#) : download it from [here](#) (using your browser) or wget, then untar and uncompress it:

```
$ wget  
http://space.mit.edu/cxc/software/slang/modules/stats/src  
/slstats-1.0.2.tar.gz  
$ tar zxvf slstats-1.0.2.tar.gz
```

Then configure and build it:

```
$ cd slstats-1.0.2/  
$ ./configure  
$ make  
$ sudo make install
```

You will need to type your password.

This will install the module into /usr/local. You now need to instruct S-Lang to look for scripts in that location. Add the following lines to

```
ME/.slshrc  
(creating the file if necessary):
```

```
append_to_slang_load_path  
("/usr/local/share/slsh/local-packages");  
set_import_module_path ("/usr/local/lib/slang/v2/modules:"$+  
get_import_module_path ());
```

To use the module in a S-lang script (more info [here](#)), it must be loaded into the interpreter:

```
$ slsh  
slsh> require ("stats");
```

To quit slsh:

```
slsh:> quit
```

Heasoft 6.9

HEASoft includes FTOOLS (FITS manipulation tools) and XANADU (X-ray data analysis).

Any problems with your Heasoft installation?

First check for clues [here](#) then [here](#)

Detailed installation guides are also available [here](#)

and

[here](#)

You'll need approximately up to 900 Mb free disk space

Download the source (300 Mb), either using [this direct link](#)

or by visiting

[the Heasoft website](#)

·
Untar and uncompress it in the directory you want to unpack it in:

```
$ tar zxvf heasoft6.9src.tar.gz
```

Then configure it. You need to specify the installation location as part of this process: we'll

use your home directory in this example
NB if you don't use your home directory, you'll need to change the other instructions to match!

```
$ cd heasoft-6.9/BUILD_DIR  
$ ./configure --prefix=$HOME/heasoft >  
config.out 2>&1
```

Wait until the configuration has finished, and build (this next step can take a very long time - don't kill the process):

```
$ make > build.log 2>&1
```

Then install the software:

```
$ make install
```

At the start of your session, the heasoft environment must be initialised. We can make that happen automatically:

```
$ echo "export
```

```
HEADAS=$HOME/heasoft/x86_64-unknown-linux-gnu-libc2.11.1-0/" >> $HOME/.bashrc
$ echo ". $HEADAS/headas-init.sh" >>
$HOME/.bashrc
```

Note that the platform string above (x86_64-unknown-linux-gnu-libc2.11.1-0) might vary if Ubuntu release updated libc packages. Check what has been created in \$HOME/heasoft to confirm the correct value for your system.

You will need to open a new terminal for this to take effect. Please do that, and close the old one, before proceeding to the next section.

Now you are ready to run the various Heasoft software packages:

Introduction, tutorials (where available) or manuals: [FTOOLS](#) XANADU: [XSPEC](#) [XRO](#)
[NOS](#)

[XIMAGE](#)

Isis 1.6.0

ISIS interactively fits X-ray spectra.

Any problems with your ISIS installation? First check for clues [here](#) then (more generally)

[here](#)

A detailed installation guide is also available [here](#)

Download the source. You can do this directly with the command:

```
$ wget ftp://space.mit.edu/pub/cxc/isis/isis-1.6.0-12.tar.gz
```

or by visiting the [ISIS website](#)

Untar and uncompress it in the directory you want to unpack it in:

```
$ tar zxvf  
isis-1.6.0-12.tar.gz  
$ cd isis-1.6.0-12/
```

Configure and build:

```
$ ./configure  
--with-headas=$HEADAS  
$ make
```

There are some built in

diagnostic tests. Before proceeding, run them and check that everything is ok:

```
$ make check
```

If all the tests pass, you can install the software by running:

```
$ sudo make install
```

You will need to type your password.

Now you are ready to run
ISIS: [Tutorial](#) [Manual](#)

Fermi Science Tools (v9r15p2)

Unfortunately, numerous errors in the build system for the Fermi Science Tools mean that compiling them from scratch is effectively impossible on this platform. However, it is possible to

download and install a pre-compiled version from the [Fermi Science Support Centre](#). Choose the version compiled for Scientific Linux 5 libc2.5, and 32 or 64 bit depending on your platform. If you're not sure, check by running:

```
$ uname -m
```

A 64 bit machine will return x86_64

; a 32 bit machine will return
i686

.

After you have identified the correct package, download with your browser or with wget:

```
$ wget  
http://fermi.gsfc.nasa.gov/ssc/  
data/analysis/software/tar/Sci  
enceTools-v9r15p2-fssc-2009  
0808-x86_64-unknown-linux-
```

gnu-libc2.5.tar.gz

Note that the [instructions provided by FSSC](#)

for installing the binary distribution also contain some errors. In particular, you should skip steps 3 & 4. Installation proceeds as follows:

```
$ tar zxvf
```

```
ScienceTools-v9r15p2-fssc-2  
0090808-x86_64-unknown-lin
```

ux-gnu-libc2.5.tar.gz

You may wish to move the resulting files to a more conveniently memorable location:

```
$ mv  
ScienceTools-v9r15p2-fssc-2  
0090808-x86_64-unknown-lin  
ux-gnu-libc2.5  
$HOME/fermi_science_tools
```

Then set the \$FERMI_DIR

environment variable to point to the newly-installed tools:

```
$ export  
FERMI_DIR=$HOME/fermi_s  
cience_tools/x86_64-unknow  
n-linux-gnu-libc2.5
```

You may wish to add this to \$
HOME/.bashrc
, so that it happens
automatically when you log in:

```
$ echo "export
```

```
FERMI_DIR=$HOME/fermi_s  
cience_tools/x86_64-unknown-  
linux-gnu-libc2.5"  
>> $HOME/.bashrc
```

In order to access the science tools, you can now run:

```
$ source  
$FERMI_DIR/fermi-init.sh
```

Note that rather than integrating with the rest of the system, the Fermi Science

Tools include an additional (and often outdated) copy of a number of standard system tools (such as Python, tcl/tk, etc). For the duration of your session after you source the `fermi-init.sh` script, you will automatically use the Fermi-supplied tools rather than your system defaults. Therefore, it is strongly suggested you only source `fermi-init.sh`

when you specifically need to work with Fermi tools, rather than as part of your normal login process!

SAOImage DS9 6.1.2

DS9 is a tool to view and analyze astronomical images. It is available for download from its website either directly using your browser or using `wget` on the command line.

Grab the "Linux64" version if you have a 64 bit machine, or "Linux" for 32 bit. If you're not sure, check using:

```
$ uname -m
```

"x86_64" indicates 64 bit;
"i686" 32.

After downloading, it can be uncompressed and run directly without any further configuration:

```
$ wget http://hea-www.harvard.edu/saord/download/ds9/linux64/ds9.linux64.6.1.tar.gz
```

```
$ tar zxvf  
ds9.linux64.6.1.tar.gz  
$ ./ds9 &
```

You may wish to move it to a location on your path so you can access it without specifying the full location:

```
$ sudo mv ds9 /usr/local/bin  
$ ds9 &
```

AIPS 31DEC10

AIPS ("Astronomical Image Processing System") is a radio data reduction/manipulation package: for details, see [its website](#)

. In particular, for problems regarding the Install Wizard, check [here](#)

, otherwise see

[here](#)

and

[here](#)

. If you are replacing a previous installation of AIPS, please clean up first:

follow

[these](#)

instructions (half way down part 2).

The following instructions are for binary installation, not "text" (ie, compilation from source). This is generally to be recommended, as AIPS is notoriously picky about compilers (see the vaguely

hilarious note on the website). You'll need approximately 1 GB free disk space.

CVS is required:

```
$ sudo aptitude  
install cvs
```

Next download the small Install Wizard file (a Perl script) from [this direct link](#) or by using wget. Choose a new directory to install AIPS, cd to it and put the file there.

Make the install file executable then execute it:

```
$ mkdir aips
```

```
$ cd aips
```

```
$ wget
```

```
ftp://ftp.aoc.nrao.ed  
u/pub/software/aips/
```

```
31 DEC 10/install.pl
```

```
$ chmod +x
```

```
install.pl
```

```
$ perl install.pl -n
```

Read & follow the on-screen instructions. Refer to the more detailed notes [here](#) at each

step. The following options seem to work for me, but you may wish to customize them. Note that the numbers are not actually consecutive(!)

Screen 0 -- hit enter

Screen 4 -- hit enter

(ie accept the default choice)

Screen 4b -- hit enter

(ie, allow yourself to have write access)

Screen 5 -- choose a

name; can be

whatever you like

Screen 5a -- enter
"y"

Screen 5b -- accept
the default (LNX64
on a 64 bit machine)

Screen 6 -- hit enter
to accept LOCALHO
ST

Screen 7 -- add the
data area suggested

(ie, /home///DATA/L
OCALHOST_1)

Screen 8 -- press "A"

to accept current
settings, then type

A4

Screen 9 -- press "A"

to accept current
settings

Screen 9b -- press

"A" to accept current settings

Screen 11 -- press

"A" to accept, then

"Y" to start the

installation.

You will now need to wait for several minutes while the

data files are
downloaded and
installed.

Eventually, the
configuration system
will set up
configuration for a
"midnight job" (MNJ;
ie, an automatic

update of the AIPS files): just hit return to acknowledge the default settings, then again to enter a blank CVS password (as instructed), then again when "ready to proceed" (you can examine thedo_daily

.localhost
file if you plan to run
a midnight job). You
will then be
prompted to hit enter
for a fourth time(!)
before finally being
told:

AipsWiz: That's it.

You should now
have the latest AIPS!
Enjoy.

Edit your `$HOME/.bashrc`
to
ensure that AIPS is
initialised when you
log in:

```
$ echo "source  
$HOME/aips/LOGIN.  
SH" >> ~/.bashrc
```

Now you are ready to run AIPS. The cookbook can be viewed online [here](#) and as a pdf [here](#)

CASA 3.0.2

Note that before downloading [CASA](#), NRAO encourage you to register with their portal at so they can notify you of updates etc. This is not actually

required for
installation, though.

CASA is
releasing the new
version 3.0.2 this
week (10 June
2010). Download
the release

candidates
(which should
turn into the final
release, probably
by the time you
read this) which
are:
[here](#) for a 32 bit

machine or

h

ere

for a 64 bit

machine

(See the
previous
notes on
uname to
figure out

which you
have)

-

Please
read
these
notes in

conjuncti
on with
the
official

documen
tation at .

You
shouldn't
need it,
but

version

3.0.1

and

other

previous
versions
of CASA
can be

downloaded from

■

After
downloading,
unpack

the file:

\$ tar

zxvf

casapy-

#####

####

.tar.gz

This will

create
a
director

y with

the

unwield

y name

of

casapy-

30.1.11

097-000

1-64b --

you

might

prefer

to move

that to

somew

here

more

conveni

ent:

\$ mv

casapy-

#####

###

\$HOM

E/casa

Change
to
that

directo
ry and
add it

to your
path:

\$ cd

\$HOME

~/casa

\$

export

PATH=

`pwd`:

\$PATH

You

can

now

start

CASA:

\$

casapy

