

Re: Source Code Installation

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 - *Date:* 29 Apr 2006 00:21:41 GMT
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On 2006-04-28, Greg <ravioli@xxxxxxxxxx> wrote:

Hi, I'm fairly new to Linux and I was hoping that someone could explain to me, as one would to a complete layman, how I would go about installing a program from the source code.

What I do after 'untarring' or 'unzipping' it, and what I need to do in order to successfully install the program, and where I will be installing it. I'm running FC 4 on i386.

First, I assume you have installed the various "development" packages in Fedora. One can install Fedora as a "workstation" which assumes precompiled programmes will be installed and which will not have the necessary files for compiling source code.

I assume the tarball is the usual. Check to see if, inside, there is a "*.spec" file. If so you can (probably) build an RPM from it and use RPM to install it and keep track of it.

But in general, assuming you have the necessary programmes and files for compiling ...

when you untar, you should get a source directory. Enter it.
If there is a README or INSTALL file, read it ("less [thefilename]").
Assuming this is a c or c++ programme, there will be an executable "configure" here (or in a subdirectory) (some programmes don't do this – for example, cdrecord has a subdirectory of Makefiles one edits by hand instead of using a configure script).

Run it with the help option and see what you can do:

```
./configure --help | less
```

there may be options you want to change (such as the "--prefix" specifying the part of the directory tree in which it installs).

Then just

```
./configure
```

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(or
./configure [with extra options you want to set])

(for perl programmes, one would use "perl Makefile.PL"
instead of "./configure" and for python, "python setup.py build"
– see the INSTALL or README files in case there is something different).

This will create a Makefile in the directory. That is a set of commands interpreted by "make" which tells it how to compile and install the programme.

To compile the programme just use:

```
make
```

If all is well to install it, as root (su to root) use
make install

(NOTE: You could change the prefix to your home directory and use ~/bin, ~/lib, etc. and install in your home directory – the default it to install for system wide use and the directories in which the files will be installed require root privileges in order to write to them.)

Almost surely (unless you changed the location for installation) the programme will wind up in /usr/local/bin, its man pages in /usr/local/man/[somewhere], if it is a library, the library files in /usr/local/lib and the header files (used by othe programmes for information on how to use the library) in /usr/local/include and the *pc files (if any) (package configuration files) in /usr/local/lib/pkgconfig/.

One thing to watch for. The package configuration script/programme by default only looks in /usr/lib/pkgconfig/ for configuration files. You may want to add /usr/local/lib/pkgconfig/ to your environment variable for the location of such files (I don't but have a script to clean and set symbolic links in /usr/lib/pkgconfig/ to the files in /usr/local/lib/pkgconfig/). If this is a library and other programmes have to find it, its version, etc., they may assume it uses *pc files. The package configuration script has to be able to find those files for other programmes to use them.

You may have to run "ldconfig" for shared libraries to be registered if they are now going to be used (I remember once installing a new version of curl, trying to run it and getting "cannot file library"!).

It is not always the case that the files will be in the above locations. The /opt directory is/was supposed to be used for extra programmes (rather than /usr/local) though very few use it. cdrecord does.

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Perl programmes will go into your perl directory tree and python in your python directory tree (and ruby and forth and rexx ...). Xprogrammes may go in /usr/X11R6/bin. Gnome or KDE may go elsewhere.

The above is for standard c or c++ programmes.

/bin, /usr/bin and /usr/local/bin are surely on your "path" so once installed you can run the programme simply by giving its name on the command line

myprogramme

(exception: If you use the (t)cshell programme it uses a hash table, array, pointing to the locations of programmes so it does not have to search for them each time. You can turn off using the hash table and have it search each time or first give the command rehash

to have it reset that table so it can find the programme.

I believe bash also uses a hash table, but if it cannot find the programme listed in that array, will automatically search for it rather than simply say that "the programme cannot be found" as the tcshell will.)

So, the "standard" is:

```
./configure  
make  
make install (as root)
```

if you want the defaults (you can find options with "./configure --help") with programmes in bin/, libraries in lib/, header files in include/ all subdirectories of /usr/local/,

Special programmes (for the gnome system, kde, perl, python, etc.) are treated "specially".

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