

## Creating the debian Directory

Debian packages are archives that can be created using low-level commands. To start building Debian packages, it is easier to use a helper tool such as `dh_make`. To install the `dh_make` tool, type:

```
sudo apt-get install -y devscripts debhelper \
dh-make
```

This will install several dependencies as well as `dh_make`. The `dh_make` command converts source archives into Debian source packages.

A packaging file tree can then be created by,

```
dh_make -p=package-name_1.0 --native
```

The command then asks what type of package should be created. Select a single binary and then press enter to confirm this choice.

```
Maintainer name : unknown
Email-Address   : pi@raspberrypi
Date            : Fri, 04 Apr 2014 22:17:38
Package Name    : package-name
Version         : 1.0
License         : gpl3
Type of Package : Single
Hit <enter> to confirm:
Currently there is no top level Makefile. This
may require additional tuning.
Done. Please edit the files in the debian/
subdirectory now. You should also
check that the package-name Makefiles install
into $DESTDIR and not in / .
```

This will create a `debian` directory in the present working directory that contains a series of example files:

```
debian/watch.ex
debian/changelog
debian/compat
debian/emacsen-remove.ex
debian/init.d.ex
debian/README
debian/postinst.ex
debian/manpage.1.ex
debian/menu.ex
debian/copyright
debian/package-name.default.ex
```

```
debian/control
debian/manpage.sgml.ex
debian/emacsen-startup.ex
debian/rules
debian/prerm.ex
debian/manpage.xml.ex
debian/docs
debian/package-name.cron.d.ex
debian/source
debian/source/format
debian/emacsen-install.ex
debian/package-name.doc-base.EX
debian/preinst.ex
debian/README.Debian
debian/README.source
debian/postrm.ex
```

Many of these files can be ignored. The important files are:

**control:** contains the basic details of the package, its version and dependencies

**changelog:** describes the changes present in each version

**copyright:** describes the licence, which should be an open source licence

**docs:** lists documentation files, e.g. a man page or a README for the software itself

**README:** describes details of the packaging of the software, not the software itself

There is also a file called **rules** that follows the syntax of Makefile and can be used to modify the details of the packaging process. In recent configurations, this file uses a lot of implicit rules and does not need to be changed.

## Conventions for the Makefile

Makefiles are a central part of building software on Linux and other operating systems. The syntax of Makefiles is introduced in Issue 7 of the MagPi.

Now that the `debian` directory has been created, the next step is to create or adapt a top-level Makefile. This Makefile should have:

- a default target, to compile and link any source code.
- an `install` target that copies files with the correct permissions into the destination directory (`DESTDIR`).