Building a gretl disk image for OS X

Allin Cottrell, December 2007

1 Objective

To build a stand-alone disk image (dmg) of gretl for Mac OS X. The final user should be able to download the dmg file, double-click to mount it, and drag the Gretl.app folder (found "inside" the image) to an Applications folder. You'll use Fink in the build process but the final dmg should not be dependent on Fink in any way; it will, however, be dependent on Apple's X11.

2 Overview

First, here are the prerequisites:

- A fully functional installation of OS X.
- Apple's X11 and the Xcode development package. If these are not already installed, they should be found on the OS X installation DVDs.
- A basic installation of Fink.
- Source code for gretl and gnuplot.
- A skeleton for Gretl.app plus some auxiliary scripts.

The method is as follows:

- Install the Gretl.app skeleton. This provides the "space" into which you'll install gretl and gnuplot.
- Under Fink, install the various required third-party packages (including the "dev" or developer components). This includes GTK+ and friends (glib, atk, gdk, pango).
- Configure and build gretl; install gretl into the right place inside the Gretl.app folder; delete some extraneous files.
- Patch, configure and build gnuplot; install gnuplot into Gretl.app; delete extraneous files.
- Tar up various run-time files from your Fink installation and dump them into the appropriate place in Gretl.app (hence removing the dependency on Fink at run time).

- Grab the latest gretl documentation and dump it into Gretl.app.
- Create a compressed disk image containing Gretl.app.

The following sections expand on each of the steps.

3 The Gretl.app skeleton

I'll make a gzipped tar file available. This will contain a mostly empty directory tree, but I'll include some "generic" files that shouldn't depend on the particular OS X build platform. This should be unzipped in some suitable location; on the OS X system to which I have access I've put it under `/Users/allin/dist`.

4 Required Fink packages

The exact line-up of these packages depends somewhat on the specific OS X variant. If a given package is available via OS X itself, then you don't need to, and probably don't want to, install the corresponding Fink package. A case in point is libxml2, which is supplied on recent OS X (but was not supplied in earlier variants).

The required packages will presumably include gtk+2, gtk+2-dev and fftw3; recode may also be required; gnuplot is not required since we'll be building that ourselves. Libxml2 will hopefully be supplied by OS X, and dlcompat doesn't seem to be needed any longer.

5 Configuring and building gretl

Needed: sample configure params; postinst shell script.

6 Patching and building gnuplot

Needed: patch plus instructions, sample configure params; post-installation script.

7 Copying Fink run-time files

Explanation; sample script.

8 Documentation files

The canonical PDF documentation for gretl is available from `http://ricardo.ecn.wfu.edu/pub/gretl/manual/en/`. You should do

```
wget http://ricardo.ecn.wfu.edu/pub/gretl/manual/en/gretl-guide.pdf
wget http://ricardo.ecn.wfu.edu/pub/gretl/manual/en/gretl-ref.pdf
cp gretl-guide.pdf XXX
cp gretl-ref.pdf XXX
```

9 Creation of dmg

Below is a shell script to create the final .dmg file. There's a copy of this in the gretl source package, in the osx subdirectory (called dmg.sh). Obviously, you'll need to edit the line that defines TOPDIR; hopefully the rest should be portable. Note that you need the top-level README.pdf for users of gretl on OS X. That's also available in the osx subdirectory of the gretl source.

```
#!/bin/bash

# the directory above Gretl.app
TOPDIR=/Users/allin/dist

HERE=‘pwd‘
KB=‘du -ks ~/dist | awk ’{ print $1 }’‘
KB=$((KB+640))
hdiutil create -size ${KB}k tmp.dmg -layout NONE
MYDEV=‘hdid -nomount tmp.dmg‘
sudo newfs_hfs -v gretl $MYDEV
hdiutil eject $MYDEV
hdid tmp.dmg
cd $TOPDIR && \
cp -a Gretl.app /Volumes/gretl && \
cp -a README.pdf /Volumes/gretl
cd $HERE
hdiutil eject $MYDEV
hdiutil convert -format UDZO tmp.dmg -o gretl.dmg && rm tmp.dmg
```