TeX for Mac OS X, Email from Rodrigo Bañuelos
July 5, 2002

Several people have asked recently about TeX on the new Mac OS system, OS X. If you have no interest in TeX on OS X, stop reading now, delete this email, and excuse the intrusion. If you have, read on.

Here are some instructions on how to get TeX working on an "out of the box" new Mac and pay no money for it. I hope they help but proceed at your won risk. I am not responsible if after you try this your beautiful new Mac behaves badly, does not boot, or worst, it explodes after reboot.

As you know, OS X is a UNIX-based operating system and as such all UNIX programs should, in practice, run on the system. Indeed, people have ported hundreds of UNIX-LINUX programs to OS X, including teTeX. (teTeX is the same texing system used in the math department network machines.) However, unlike some other UNIX-type systems around (such as linux), OS X does not use the "xwindows" system. Its front-end user interface is called "Aqua". For this reason, you need to install teTeX and a TeX previewer different from "xdvi". OS X does have a "command-line terminal" which leads some to think that it is an x-terminal, is not. Fortunately, you do not need the "xwindow" system to run teTeX but you do need something to see your math after you tex it.

1) Installing teTeX: Go to http://www.rna.nl/tex.html and scroll down to "TeX Installation and Configuration Products". Click on "TeX.dmg" to begin downloading it. (Warning: You probably should not do this via modem, it is about 65MB and it will take a very long time.) Once downloaded, click on the icon to unpack it and to mount the disk image. Open the disk image and click on the "TeXGSInstaller" icon. This opens a window with several buttons. (i) Select "Letter Paper Size" (top left) so your printing will be properly configured for US-type page printing. (ii) Click "Install and initialize TeX". At this point you will need to enter your "superuser/administrator" password. Do this and wait for the installation to complete. (iii) Click on "Install GhostScript". When this is done, close all windows and exit the installer. To use teTeX from the command line, add the line "/usr/local/teTeX/bin/powerpc-apple-darwin-current" to your PATH in your .schrc file. If such a file does not exist in your home directory, create it and add the line: setenv PATH "$PATH:/usr/local/teTeX/bin/powerpc-apple-darwin-current". If all went well (it should have), teTeX should now

be working. Open a terminal and test it with a file by typing "tex file.tex" or "latex file.tex" or "pdflatex file.tex", etc. At this point you still need to be able to "see" your math formulas after the file has been texed.

2) Installing a Tex Previewer: There are several solutions for this now. Perhaps the simplest (and a very nice one as well) is TexShop, written by Richard Koch, Professor of Mathematics at the University of Oregon, and given to the texing world for free. This is an editor and previewer for teTeX. It runs the "dflatex" or "pdftex" command to produce the "ps", "dvi" and "pdf" files all at once. It displays the "pdf" file. It is found at http://darkwing.uoregon.edu/ koch/texshop/texshop.html. Once in you machine, click on it to unzip it, if it did not unzip automatically after the download. Move the folder to your "Applications" folder/directory. Click on the TeXShop icon, open a file, and press the "tex" or "latex" button to tex it. For more information and instructions on how to use and configure TeXShop, see Professor Koch's webpage.

3) Dvi and Postscript files: If you have a dvi or postscript file but no tex source file, open it with TeXShop. This will convert it to a pdf file and will open the pdf file automatically. If there are eps figures in the file, use "TeX and GhostScript" from the "typeset" menu in TeXShop so that the figures are properly displayed. If you want a dvi viewer and a postscript viewer, download them from http://www.kiffe.com/textools.htm. The installation instructions are there.

4) Xwindows: The whole "xwindows" system (XFree86) has been ported to Mac OS-X. It is called "XDarwin". It is now packaged in such a way that it is remarkably easy to install. It runs side by side with Aqua. With this you can run xdvi, gv, xfig, xemacs and many other unix/linux x-applications, as well as many of the unix-linux window managers such as icewm (popular in the math department) and even GNOME and KDE. For information on XDarwin and related matters, see http://mrcla.com/XonX and http://fink.sourceforge.net/index.php. This approach is perhaps the best solution but it is a little (an epsilon) more difficult to install and configure than just installing teTex.

5) Keeping your TeX up-to-date: The above tex distribution for OS-X (kindly prepared and maintained by Gerben Wierda) is based on the so called "TeXLive-teTeX" distribution which is very much up-to-date with many packages which you will probably never need or ever use. To keep

your TeX installation current, download the "TeX-i-installer" from Wierda's site http://www.rna.nl/tex.html and periodically check for updates. This i-installer automatically downloads and installs Wierda's new releases of teTeXLive. The instructions on running the i-installer are fairly simple. Click on "check for new package versions available" and follow the instructions. With a fast internet connection it takes just a few minutes to keep your system current.

6) (Not related to TeX) A Mac running OS X is not an ordinary Mac: The default (factory) installation of Mac OS X provides a fully functional, multiuser, Unix Server. It is powerful and dangerous at the same time as it runs many services which can potentially present security problems if your Mac is connected to the internet 100% of the time on some local network or via DSL/cable modem at home. This is particularly critical if your Mac has a fixed IP number, as it is the case if you use the *Purdue resnet service,* and you don't have a router which automatically shuts–off these services. Services that OS X runs (can run) include "ssh server", "apache webserver", "telnet server", "rlogin server", "finger server", "ftp server", "Apple Talk server", and several others. Most of these services can be turned off by going to "System Preferences" then to "sharing". Some others need to be turned off in certain .config files in the "/etc" directory but unless you know what you are doing, I do not recommend messing with those files. You can do yourself more harm than good! To check which "ports" are open and to see some of the services running on your Mac, go to "Network Utility" then to "Port Scan", enter the name of your machine, and scan for open ports. I recommend closing everything except possibly the ssh-server, if you need to log into your machine while you are away from "home". The ssh server also runs a secured ftp server and can forward x-applications. To learn about ftp via ssh, type "man scp" and "man sftp" in a terminal window. The files that configure the ssh-client and the ssh-server are in the "/etc" directory. Again, I do not recommend messing with these files unless you know what you are doing. Finally, it is extremely important, from what I read in security news groups, to maintain your ssh (client and server) up-to-date. Using an outdated ssh for which all the bugs and security holes have been well advertised and documented is worst than not using ssh at all. This applies to all ssh users on any system. As of this writing, the latest "openssh" (OpenSSH-3.4p1) was released June 26, 2002. I suggest running "software update", from "system preferences", periodically. Thus far Apple has been fairly good with security updates (I think). Also, check http://www.openssh.org for new releases.