

Run Unix Apps in Mac OS X

by Mary E. Tyler



WHAT YOU NEED

- Mac OS 10.2 or later (\$129, www.apple.com)
- OS X Developer Tools (free with OS X)
- Fink (free, <http://fink.sourceforge.net/download>)
- FinkCommander (free, <http://finkcommander.sourceforge.net>)
- X11 for Mac OS X (free, www.apple.com/macosx/x11)
- X11 for Mac OS X SDK (free, www.apple.com/macosx/x11)
- Internet connection (broadband strongly recommended)

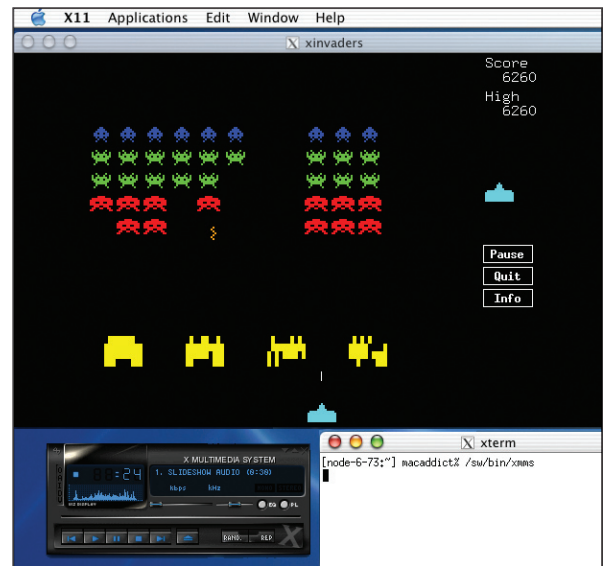
You've seen the hype all over the Web: "Thousands of Unix programs, completely free!" Cool, you think. OS X runs on a Unix kernel, right? So you should be able to just download any Unix program you want and double-click, right? Wrong. Ah, if only it were that easy. Then again, it ain't difficult, either.

Thankfully, there's Fink. No, we're not referring to your whiny, kiss-ass brother or any particular rat. Fink is a nifty open-source project that ports Unix software to OS X. Its intention is not so much to port everything Unix to the Aqua interface as to enable Mac users to compile and run Unix apps. OK, yes, to actually run these programs, you will need to leave the beauty that is Aqua to tread into the Terminal—and even scarier, X11—but fear not. While ambitious Unix connoisseurs have relied on the Terminal



to install Unix apps in the past, the latest rev of Fink allows you to do most of the work in Aqua.

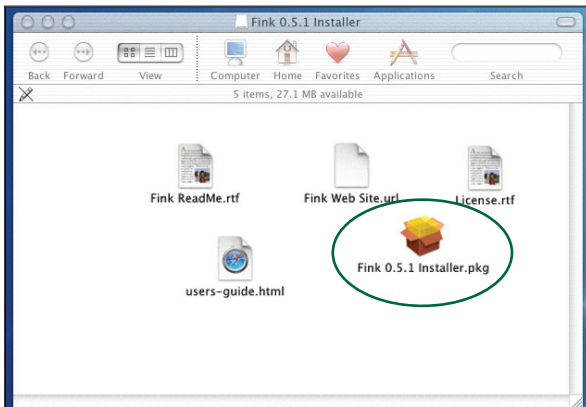
If you're interested in exploring the world of Unix and want to take advantage of those thousands of free Unix



Want free apps like this retro Space Invaders take-off? Install Fink and X11, and discover the world of Unix in Mac OS X.

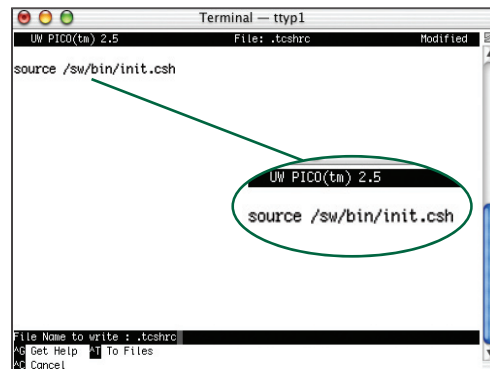
apps, we show you first how to install and configure Fink, and then how to use it with FinkCommander to install Unix binaries and run apps in X11 (X Window System 11) on your Mac.

1 Install the Fink Package If you haven't already done so, download Fink from the URL listed above (click any download file and select a mirror site to begin the process), or get it from our Disc. Once you mount the disk image (and get your mind out of the gutter), just double-click the package (.pkg) file to install it (you must have Administrator access). Unless you want to trash Fink and everything it has installed, don't move the sw folder or change its name. If you do, you'll learn more about Unix than you ever wanted to know. (Note: At press time, the Virex 7.2 update on .Mac severely crippled Fink and vice versa. Please visit the Fink Web site for current news before installing Fink.)



Hmm...nice package. Just double-click this file to install Fink in your system.

2 Shuck the Shell Time to roll up your sleeves. To use Fink, you need to edit the default Terminal shell's configuration file (a *shell* is a Unix command-line interface; the Terminal is a shell around OS X's Unix kernel, Darwin). Launch the Terminal (in the Utilities folder in Applications). At the prompt type **pico .tcshrc**, and press Return to edit the config file in pico, a Unix text editor. (If you're using something other than the default tcshell, edit the config file for your particular shell.) Then type **source /sw/bin/init.csh** (this executes Fink's initialization file when a new shell opens), press Control-O (that's an O as in Omigod-I-can't-believe-you're-making-me-friggin'-do-this) to save the file, press Return, press Control-X to exit pico, and quit the Terminal.



Call up pico, a Unix text-file editor, from the Terminal to edit the shell's configuration file so you can use Fink.

3 Search Fink's Database for Apps

To have Fink scan its online database for programs to install (you need to be connected to the Internet), launch the Terminal to open a new window (aka your newly edited shell). At the prompt, type **fink scanpackages** and press Return. Fink will call up the sudo version of the command, display the command line, and then ask for your password. Type it in and press Return. Fink will do its deed, combing the database and displaying gobbs of gobbledygook in the process, and then return a prompt when finished. Close the Terminal window.

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Terminal — ttty1
Last login: Fri Jan 24 13:09:15 on ttty1
Welcome to Darwin!
<I'm a MacAddict> fink scanpackages
sudo /sw/bin/fink scanpackages
Password:
Reading package info...
Updating package index... done.
Information about 924 packages read in 15 seconds.

dpkg-scanpackages dists/local/main/binary-darwin-powerpc override | gzip >dist/
local/main/binary-darwin-powerpc/Packages.gz
Write 0 entries to output Packages file.
dpkg-scanpackages dists/stable/main/binary-darwin-powerpc override | gzip >dist/
stable/main/binary-darwin-powerpc/Packages.gz
Write 0 entries to output Packages file.
dpkg-scanpackages dists/stable/cryptobinary-darwin-powerpc override | gzip >dis
ts/stable/cryptobinary-darwin-powerpc/Packages.gz
Write 0 entries to output Packages file.
dpkg-scanpackages dists/local/bootstrap/binary-darwin-powerpc override | gzip >di
sts/local/bootstrap/binary-darwin-powerpc/Packages.gz
Write 0 entries to output Packages file.
<I'm a MacAddict> _

```

To have Fink find all of the available Unix apps it can install from its online database, command it to scan packages.

4 Go to X11

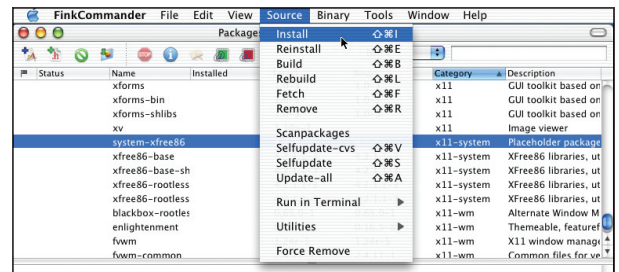
Before Apple released the X11 for OS X beta (Apple's Xfree86 port), you had to use Fink to install both Xfree86 and Xfree86-Threaded to run X11, a GUI (graphical user interface) for running Unix apps. Though the Fink Project offers X11 packages, it recommends Apple's release. Download the file (Apple may have a different release by the time you read this, so search its Web site if the URL is no longer valid); it's a good 42MB, so unless you have a broadband connection, go get a cup of coffee...and a Danish...and some Chinese food. Download the SDK from this site, too. When the files are done downloading, install X11, then the SDK. (For subsequent X11 releases, check the Fink Web site for any fix-it scripts and installation instructions.)



At press time, you could download Apple's public beta of X11 for Mac OS X from Apple's Web site.

5 FinkCommander, Install My Package

Yes, you Unix junkies know we can install packages (apps) in the Terminal using dselect, but we're going to be nice and play in Aqua (regardless of how much you cry that Aqua is for weenies). If you're a real propellerhead, feel free to follow the dselect directions on the Fink Web site. For the rest of you, FinkCommander provides a Fink GUI and a one-stop-shop for installing Unix apps. Install FinkCommander (drag the app from the disk image to any location), and then launch it. When it starts, it connects to a package database and displays a lengthy list of available apps in its window. To install a GUI for Darwin, click the Category header to list packages by category, and then scroll down until you see the x11-system offerings. Select the package named system-xfree86. From the Binary menu, select Install. FinkCommander will install the package (and tell you to have a nice day).



Rather than install the Xfree86 System package via the Terminal, with FinkCommander you can install it in the comfortable surroundings of Aqua.

WHATCHU TALKIN' 'BOUT, WILLIS?

TECHNOBABBLE DEBABBLED

binary A program that can be installed on your Mac and configured without compiling.

compile To turn text-based code into a binary format that the computer understands.

eleventeen More than a whole lot, but less than a buttload.

fullscreen (aka rooted) The mode in which the X-window manager takes over the entire screen; you won't be able to see or use your OS X Aqua windows.

GUI Often pronounced *gooey*, this acronym stands for graphical user interface, which provides a system of graphics, text, and

icons for commanding a computer. OS X's GUI is called Aqua.

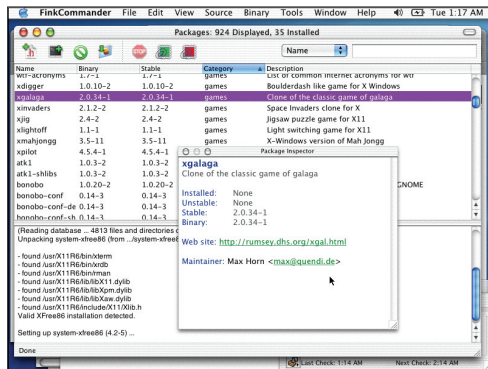
rootless The opposite of fullscreen, this mode allows you to switch back and forth between your X-window manager and your OS X Aqua windows.

shell The command-line interface to Unix. There are a variety of shells available, each one different. Think of them as cars—some go fast, some are tough, others are reliable. They all get you from point A to point B, but the experience of the road differs.

X-Window System Developed by MIT, X-Window System is essentially a graphics-display system. The numerous implementations run on a wide range of computer systems, including Mac OS X, Unix, Linux, and Windows.

X11 Also known as X Window System version 11. This implementation of X Windowing System is the Unix standard, and provides a GUI to Unix.

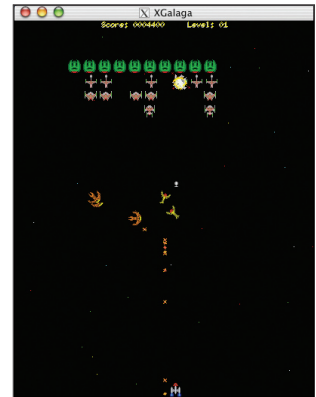
6 Install Apps Now for the fun part...games! OK, there's a lot of other cool software available from Fink—everything from music codecs to ASCII art libraries—but hey, let's have some fun. Depending on your age and Generation X—itude, you may remember Galaga, the classic 2D space shooter—XGalaga is a Unix clone. Scroll up the list until you see Games under the Category list, and select XGalaga. From the Binary menu, select Install to install the package on your machine; FinkCommander will do any necessary configuring. To find information about any particular application, click a package and select Show Package Info from the Tools menu. Rest assured that the apps listed in FinkCommander are stable; all the bugs got shaken out on someone else's desktop, so they won't be chomping on yours.



Play games?! Now we're talking! Let's install Galaga, FinkCommander.

7 Launch X11 and Go Play There are about eleven ways to start X11 on your Mac, but this is one of the easiest. In the Applications folder, double-click X11 (essentially a GUI for Darwin). Depending on what version of X11 you have installed, the app may ask if you want to be in Rootless or Fullscreen mode; choose Rootless. X11's Xterm window launches, displaying a login prompt (similar to the Terminal's); type `/sw/bin/xgalaga` and press Return to launch XGalaga in a new window. Now go kick some alien butt!

To play XGalaga (or launch any other installed Unix app), fire up the X11 GUI and call up the app from the bowels of Darwin.



Mary E. Tyler loves Macs so much that she still buys them even after one tried to burn her house down. She has no such allegiance to Unix workstations.

WANT APPS?

In case you're overwhelmed by all the apps listed in FinkCommander's window, here are some of our favorites. Though we've provided you with the URLs so you can get more info, we highly recommend that you install these packages through Fink.

AbiWord (www.abisource.com) This free, open-source word processor reads Word 97 through 2000 files (take that, Microsoft!). Even better, a native OS X version is coming soon.

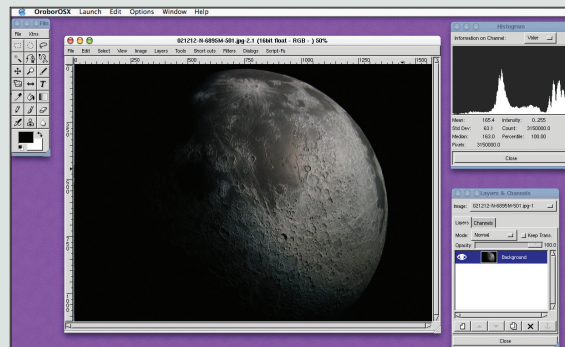
Bidwatcher (<http://bidwatcher.sourceforge.net>) Addicted to eBay? This eBay management and sniping tool should satisfy your fervent buy-and-sell habits.

Bluefish (<http://bluefish.openoffice.nl>) If your writings are on the Web (not on the wall), this HTML editor is a handy, easy-to-use tool for hard-core Web monkeys. It even features colored syntax so you can quickly eyeball code as you go.

Ethereal (www.ethereal.com) If you need to see what's heading down your network pipes or want to examine packets, this network protocol analyzer will do the trick—and of course it's free.

FilmGIMP (<http://filmgimp.sourceforge.net>) This cool movie-editing tool lets you paint and retouch movie images, and was used in feature films such as *Scooby-Doo*, *Harry Potter*, and *Stuart Little*.

GIMP (www.gimp.org) This tool (aka GNU Image Manipulation Program) is the Unix world's answer to that gosh-darned-expensive Adobe product. Manipulate your graphics and photos—for free.



Need to clean up frames in your movies? FilmGIMP will let you do things to make your movies look better, such as tweak exposures.

LilyPond (www.lilypond.org) If you're well versed in music notation, you'll appreciate this app, which prints beautiful music (sheet notation) from a plain-text description file. It can also import from a variety of other music-notation programs.

surf (<http://surf.sourceforge.net>) Student or algebraic egghead? Graphing high-school algebra gets easier with this app, which will help you plane algebraic curves and surfaces. Ax + By = C, anyone?

Window Maker (www.windowmaker.org) This X11 window manager is GNUstep (NeXt-like) in appearance—great for those who feel lost in Aqua and want something retro to go with their Objective C development environment.

YAFC (<http://yafc.sourceforge.net>) If you need to shuttle files to remote locations, YAFC (Yet Another FTP Client), has enhanced FTP features, including SSH2 (sftp) support for superb encryption.