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Run Linux on your Mac!

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Run Linux on your Mac systems!

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Mac hardware of all shapes and sizes.

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Run these Linux applications on your Mac

 Notebooks


For stability on the run, try Linux on your PowerBook!

Are you currently running Linux on your Mac? If so, we would love to hear from you! If you have any information that Mac users will find helpful, we'll post it on our site. We are looking for installation guides, compatibility notes, Howto's, suggestions, etc. If you would like to help us empower the Mac community with Linux, please email submissions to sales@elinux.com

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I. Why should I run Linux on a Macintosh computer?

If you are looking for a high quality, free, Unix-like, Open Source, multi-tasking, powerful and stable operating system, think Linux. Linux is hot these days, and not just in the developer's world. The Internet depends on Linux-- it's being used by 25 percent of all corporate servers, and over half of all ISPs.

If you've read or heard a lot about running Linux on PC-compatible computers, but not much about Linux on the Macintosh, that's because Linux was originally constructed for use on computers built around Intel x86 (and compatible) microprocessors. [Linux distributions for the Mac](#) allow x86 users the first chance to run a Unix-type system on an alternative architecture. Fortunately, most of the information about Linux on the PC platform applies to the Macintosh platform as well, but there is a lot of good [online information specific to Linux on the PowerPC](#).

Linux will run on everything from the 68020-based Mac II (although you'll need to install both the MMU and FPU chip options) to the latest G4, but not every distribution of Linux will run on every Macintosh computer. You can download Linux from an FTP site on the Internet for free, but unless you have very fast Internet access (128kbps ISDN or faster), it's probably a better idea to pay a couple of bucks and get a CD-ROM version. One site estimates that downloading just the binaries without source or companion software could take up to 40 hours using a 28.8kbps modem. If you're totally new to Linux, we recommend that you check out "[Linux for Newbies](#)" in the eLinux.com Community section.

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1. Linux is a powerful operating system

Linux is the ultimate operating system for Web servers, Network administrators, Web masters, and is a powerful software development environment. With the ability to transmit data to millions of computers on a daily basis as a Web server, or to send thousands of megabytes of data across networks, Linux is quite impressive. Your grandmother might find the raw power of Linux a bit daunting and want to stick to the point-and-click MacOS, but if she's the adventurous and ambitious home user that you are, she can install them [side-by-side!](#)

Linux is a popular choice for those with mission-critical applications, and any operations where performance, stability, parallel computing, and the ability to handle large amounts of information are of key importance-- such as hospitals, schools or research labs. For example, the [United States Postal Service](#) currently has over 6000 Linux computers deployed around the country to sort and route the nation's mail. Kai Staats, Founder and CEO of [Terra Soft Solutions](#) let us know that Northrup Grumman Corporation has an Apple PowerPC cluster running Terra Soft's [Black Lab Linux](#) in a test of high-performance, low power consumption, real-time data acquisition and processing, with the goal to support airborne radar imaging systems.

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2. Linux breathes new life into underpowered hardware

Linux may well be the most powerful operating system in the world today, and its lean core allows it to run on all kinds of underpowered hardware that may have been previously relegated to the broom closet. But you probably haven't put that old SE/30 in the closet yet, have you? Maybe your kids are playing on it. Well, now with Linux, you can host a Web site on it! That's the amazing thing about Macintoshes-- their longevity. People tend to keep their Macintosh around for a long time.

Linux runs on practically every Mac that's ever been made. Suppose you're tired of shelling out the big bucks to pay an ISP to host your Web site, but you have an old 7300 lying around at home. With Linux, you can get all the software you need, connect to the Internet by DSL, and host your own site. That's just what Michael Coyle of [ResExcellence Linux Icebox](#) did. He receives over 250,000 hits per day and hasn't crashed once!

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3. Linux is a highly stable platform

While it's not true that Linux never crashes, uptimes of over a year are not uncommon. Bugs or security holes are infrequent at best, and in the event that something does happen, you're not at the mercy of a large corporation. A world of developers and hackers have access to the code, so patches are developed in a matter of hours, not weeks or months, and are freely available to anyone.

Although this probably isn't much of a concern anymore, Linux is "Y2K-compliant" because it stores the date differently than other systems. Its trouble date is the year 2038, but with the pace of modifications, it's unlikely that the kernel will have a problem 38 years from now! So if you're tired of seeing those little bombs on your screen (or just can't afford to see them), you should look into Linux. Plus, Linux was designed to be upgraded and modified on the fly, so unless you want to add hardware or boot from a different kernel you don't need to turn the system off, which is a great advantage in the workplace.

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4. Linux is a true multi-user, multi-tasking system

Unlike other operating systems, no single application can monopolize the CPU. You can run two applications simultaneously without compromising speed, and unlike with the MacOS, two users on the same machine can run the same program. And because it was developed as a multi-tasking environment, you get a true server environment with Linux.

According to the article "[Outside Intel](#)" by Dan Burcaw of [Terra Soft Solutions](#), a team of researchers at the University of Adelaide in Australia created a 38-node iMac cluster powered by [LinuxPPC](#), Inc.'s distribution for about one-tenth the price of an ordinary supercomputer.

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5. Linux is Open Source

"[Open Source](#)" means that the source code must be made available to everyone. That includes you. So there is a very politically correct feeling about this movement. Besides hundreds and hundreds of free software applications and utilities, you have real-world access to the development community and its efforts. You can fiddle around with the source code and make modifications to your heart's content, and even submit an idea to the Linux Open Source group, headed by Linux Torvalds. If accepted, your code will be added to future versions of Linux.

This approach to software has helped create a very powerful, stable OS that evolves according to the needs of the users, not a corporation. It may well be that Linux is the path toward a truly universal OS.

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6. Linux is free

Keep in mind that "free" pertains to freedom of use and distribution, and not the price. Linux is "freeware," not public domain or even shareware, and is distributed under the [GNU Public License](#). This means that it's perfectly legal for companies to charge money for their unique distribution of Linux, as long as the source code is included (or made available). And if you do pay for a distribution from a commercial distribution company, there's the added bonus of thousands of dollars worth of software bundled with it. If your company is looking at a costly Unix operation, you should definitely consider Linux, which is a complete Unix-like, POSIX-compliant operating system, but for a fraction of the cost. Or if you are looking to purchase or upgrade to the latest MacOS, adding Linux will cost you far less. Speaking of upgrades, once you have your free software for Linux, upgrades won't cost you a dime either.

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7. Software costs you nothing

Not only is the Linux OS free, so is most of the [software](#). If you can't afford some of the great programs out there, you should be interested in Linux. If you're a developer, hacker or student, all the languages and development tools you will ever need are available free on most distributions, which accounts for the ever-growing list of software available to the end user. The powerful Web server Apache, the most widely used server on the Internet, is free, even for commercial use.

Although there is not much commercial software around for Linux on the Macintosh, developers around the world have spent a great deal of time creating a ton of software that is available free. This is a major selling point for people on limited budgets, such as schools, students or start-up companies. Apache is the most popular Web server around, and it comes bundled with almost all distributions. Instead of paying \$500 for a graphic design program like Photoshop, you can get a copy of GIMP, a powerful alternative that won't cost you a dime. Software such as ApplixWare and StarOffice offer you top quality word processor and spreadsheet functions. You won't have to give up your [games](#), either.

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8. Linux is user-friendly

It's not quite ready for your six-year-old, but slick GUIs such as Gnome and KDE offer icons and a task bar that give you a graphical environment that's getting closer to the MacOS interface. And if you think the MacOS GUI is customizable, you ain't seen nothing yet! You'll enjoy playing around with colors, textures, shapes, highlights and backgrounds. Linux hasn't left the command line, however.

Although you it's no longer true that you have to memorize a ton of abbreviations, directories, permissions and commands anymore, you will have to get used to typing some command prompts in order to maneuver about efficiently, but this shouldn't intimidate a computing aficionado like yourself! And the payoff is that you generally have more power and more options when your program accepts command line commands.

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9. Linux offers great networking

Linux supports AppleTalk and TCP/IP among a host of other protocols. Support for TCP/IP networking has been present in Linux since its beginning, and since it is one of the fastest and reliable implementations, it's one of the key factors of Linux' success. Linux also supports firewalls, proxies and IP masquerading, allowing you to share a single net connection among many machines, transparently. You can also protect your data when connecting to the Internet by modem or DSL. Linux is an excellent server platform, and the inclusion of Netatalk means you can have a very reliable file server for your MacOS desktop machines. Netatalk is an AppleShare IP-compatible server that is significantly less expensive than AppleShare IP but performs almost identically.

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10. You can run the Mac OS and Linux OS side-by-side

If you have a Mac, you don't have to dump your MacOS in order to give Linux a trial run. You can run the MacOS and Linux side-by-side, and a dual-boot Macintosh running both the Mac OS and Linux is a powerful tool. You'll need to partition your hard drive with a utility like FWB Hard Disk Toolkit, pdisk, or Drive Setup. Thanks to Benjamin Herrenschmidt, you have the ability to choose between the best of both worlds. He developed a utility called BootX that lets you choose either the MacOS or Linux OS via a control panel at startup, depending on the functionality you need. You can also run BootX while you're running the MacOS.

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11. PowerPC hardware offers speed and low power consumption

When you put together the power of Linux and the speed of the PowerPC processor, (easily the fastest available on the market), you have quite a combination. According to Intel's own tests, a 500 MHz PPC processor is an average of 2.94 times faster than a 600 MHz Pentium III processor.

In addition, the PowerPC hardware has 40 percent lower power consumption than the equivalent Intel platform, making it far more efficient. So in the case of a power failure and you have to rely upon a backup power supply, you'll get that much more productivity out of your machine. For more information, check out [PowerPC Performance Comparison](#).

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12. Linux on a Mac takes advantage of the new AltiVec technology

In a nutshell, the [AltiVec](#) technology (dubbed "Velocity Engine" by Apple) provides the performance of a supercomputer with the convenience and price of a desktop computer. "AltiVec technology is Motorola's high-performance vector parallel processing expansion to the PowerPC RISC processor architecture," a solution that radically increases (150-300%) performance-driven, high-bandwidth communications and computing applications.

Terra Soft Solution's [Black Lab Linux](#) is the only Linux for PowerPC distribution that offers AltiVec development support, specializing in development, parallel, and embedded systems. This makes it an incredibly compelling choice for scientists and technical researchers desiring an off-the-shelf, low cost to performance parallel system. Terra Soft Solutions is currently co-sponsoring "[Apple's Science and Technology Roadshow 2000](#)" with Apple Computers, National Instruments, Research Systems and SAS Institute. They are demonstrating the awesome power of Linux on clustered G4s with the AltiVec "Velocity Engine" to people at MIT, Argonne National Laboratory, Fermilab (U.S. Dept. of Energy lab), National Institutes of Health, and NASA.

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II. Linux distributions available for the Mac

There are quite a few Linux distributions from which to choose if you have a Macintosh. During the life of the PowerPC chip, the Apple motherboard has been tweaked three times, however, so between chips and buses and processors (oh my!), you won't find a distribution that will work on every Macintosh, but there is something for everyone.

Distributions for the PowerPC are incompatible with older Macs based on the Motorola ISC 68000-series processors (m68k), so Debian Linux/m68k is pretty much your only choice for 68k Macs. MkLinux is the only distribution that will run on NuBus-based PowerPCs, although MkLinux will support a wide range of PowerPC-based Macs. If you have a PCI-based PowerPC, you can run any of the distributions listed below, which are available via FTP or a CDROM.

There has been some confusion over terminology. Distributions for the PowerPC have been called several things-LinuxPmac, LinuxPPC, or PowerPC Linux. The correct term for any distribution that runs on the PowerPC platform is "Linux for PowerPC," to avoid confusion with LinuxPPC, Inc.'s proprietary distribution.

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1. Commercial distributions

- [Yellow Dog Linux \(YDL\)](#) by Terra Soft Solutions offers a professional distribution for the PowerPC platform. YDL Champion Server is specifically designed for the Intra/ Internet, development and other mission-critical environments.
- [SuSE PPC 6.4](#) is available now (as of May 2000); SuSE had announced its first PowerPC Beta at MacWorld Expo in San Francisco.
- TurboLinux, which is still in Beta, includes both the MkLinux and Linux PowerPC kernels so you can choose either when you install it. They are huge in Asia, with 50% and 70% of the Japanese and Chinese markets, respectively. This is the only distribution for the Mac not based on Red Hat.
- [Red Hat](#) does NOT currently have a distribution for the PowerPC, but [Connectix Virtual PC](#) lets you emulate Red Hat® Linux on your Mac. You won't have to partition your hard drive because the Linux operating system is kept within Virtual PC. You can easily go back and forth between the Linux and Mac environments without rebooting every time.

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2. Non-commercial distributions

- [Debian Linux/ m68k](#) is the port of Debian GNU/ Linux to systems using the Motorola 68000 series processors (68020, 68030, 68040 and 68060 microprocessors). Power Macintoshes are not based on Motorola's 68k chips so they won't run the m68k Linux port. Debian Linux is the only major Linux that runs on the 68k Macs, although a couple of other unofficial options are listed at: [Linux/ m68k distributions](#) (one of the [Linux/m68k](#) project home pages). Debian has a PowerPC version that's downloadable, but still under development, and keep in mind that it's all being done by unpaid volunteers over the Internet.

Note: [NetBSD](#) and [OpenBSD](#) run on 68k machines, but they are not Linux-- they are free downloads of Unix.

- [MkLinux*](#) is the first Linux distribution ever available for the Mac, and the Developer's Release 3 (DR3) is available at the [MkLinux Mirror Sites](#) or you can purchase a CD from [Prime Time Freeware*](#). MkLinux is still a favorite of many, although there are complaints of it running more slowly than other distributions. Developed on top of a Mach microkernel, it began as a project by Apple Computer and the OSF Research Institute (now Silicomp RI), but it's been a community-led project since 1998. MkLinux supports a wide range of PowerPC machines, but not the blue-and-white G3s, the G4s, iMacs, and iBooks. If you have one of the older NuBus based machine (61xx, 71xx, 81xx or Performa 61xx), this is actually the only distribution you will be able to use, because the monolithic kernel version doesn't support non-PCI based Macintoshes.

*NOTE: Prime Time Freeware has a new contact number: (650) 321-2196

- [Rock Linux](#) is a small (but not "mini"), modern Linux distribution designed for skilled Linux/Unix users, as it does not include menu driven configuration tools. It is free under the terms of the GPL.

- [Slackware](#) does not currently have a distribution, but Slackware's Logan Johnson is working on a port to the PowerPC as a side project. Although he's gotten as far as "purifying" a basic development system by recompiling it against itself and packaging it, he is unable to give us an ETA. In the meantime, there is a very unofficial project, affectionately called [Slackintosh exploits!](#)
- [Mandrake](#) does not have a full port for the PowerPC out yet, but you won't have to wait long. According to Mandrake's Laurence Jacq and Gael Duval, a downloadable version that will support the iMac, iMac/DV, iBook and RS/6000 will be available off the Internet in a few weeks!

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3. Other

- [Mac-on-Linux](#) is a Mac emulator that lets you run the MacOS on Linux running on a PowerPC based machine. Since it runs natively on the processor, it's faster than the emulation done in Virtual PC.
- [Real Time Linux](#) is an extension to Linux that handles time-critical tasks.

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III. Online Resources

1. Linux Links

You can find great information about Linux on the Macintosh at the following sites:

- [linuxppc.org](#) is the home page of the general project to port Linux to the PowerPC (Linux PowerPC). Note: It is NOT the same as linuxppc.com, which is the home page for LinuxPPC, Inc., the company that produces the LinuxPPC distribution
- [Linux on PowerPC FAQ-O-Matic](#) is an evolving Linux for PowerPC Knowledgebase where you can check for supported hardware among a host of other topics
- [malinux.com](#) is a fine presentation of why Linux is a great choice for the Mac
- [GNUpples](#) has a ton of GNU/Linux and Mac-Compatible information, reviews and links
- [ResExcellence- Linux Icebox](#) contains a wealth of tips for modifications you can make to Linux for the PowerPC
- [MacInstruct](#) has free tutorials that teach people how to use Macintosh computers
- [Low End Mac](#) is a cool Macintosh news/ articles/ resource site
- [Linux for the PowerPC Kernel Information](#)
- [Linux for PowerPC Embedded Systems HOWTO/ FAQ](#)
- [Linux Help Center](#) lets you search topics and ask questions on a variety of Linux topics
- [The Linux Documentation Project](#) maintains free documentation, manuals and articles on running the Linux operating system and application software
- [Linuxnewbie.org](#) is geared towards the Linux newbie
- [Focus on Linux](#) is a resource center on a multitude of topics
- [Linux Software Encyclopedia](#) is a comprehensive alphabetized and annotated list of links to sites with software for Linux
- [Linux.com](#) is a community-produced site full of information and news

- [Linux Online](#) is designed for information and promotion of Linux
- [PHOAKS](#) stands for "People Helping One Another Know Stuff"
- [Freshmeat](#) offers a variety of software for Linux
- [Slashdot](#) has news on Linux and the computer industry in general

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2. Mailing Lists & List Archives

- [MaX](#), is a very helpful list hosted by [Low End Mac](#) for people getting started on Linux, NetBSD, or some other Unix-derived OS on Macintosh hardware
- [Debian/68k mailing list](#) is an unmoderated and open Debian/m68k mailing list for discussing anything related to Debian/m68k, and the entire [Debian mailing list archives](#)
- [Mailing list for Linux /m68k and links to archives of them](#)
- Information about the Debian lists can be found at www.debian.org
- [MkLinux mailing lists](#)
- [Linux PPC mailing list archives](#)
- [linuxppc-dev list archive](#)
- [Yellow Dog and Black Lab Linux mailing lists](#)
- [SuSE mailing lists](#)
- [Rock Linux mailing list](#)
- [Mac-on-Linux user and developer mailing lists](#)

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3. Newsgroups

Whether you're a newbie or a veteran, you'll find a newsgroup that addresses your interests at one of these sites. Newsgroup protocol is that you don't cross-post (post the same message to more than one group), so try to find the group that best suits your question. When in doubt, post to [comp.os.linux.misc](#). If your ISP's news server doesn't have the group you're looking for, you can ask them to add it, or check Deja.com.

- [Linux Online's Newsgroups List](#)
- [Linux Links' Newsgroups List](#)
- [Deja.com's Usenet Discussion Service](#) contains all current and archived Usenet messages on the Internet

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IV. Software available for Linux on the Mac

The [Open Source](#) approach to software development has produced hundreds if not thousands of free applications, and they are covered under the [GNU Public License](#), which guarantees that they will always remain free.

Since most of the software available for Linux is available as source code, most Intel-based software for Linux will run on your PowerPC with a simple recompile. If you have one of the older Macs, do keep in mind that many Linux applications require 32MB of memory. [Linux Software Encyclopedia](#), a

comprehensive alphabetized and annotated list of links to sites with software for Linux, is one of the great archives of Linux software available.

eLinux.com offers the following Hard Drives with Linux Software Installed!

[Yellow Dog Linux: Champion Server Pre-Installed](#)

[Black Lab Pre-Installed Drive](#)

Distributions for the Mac

[LinuxPPC 2000](#)

[SuSE PPC v6.4](#)

[Yellow Dog Linux- Install, Source and Rescue CDs, Installation Book, Binder and a Zipper Case](#)

[Yellow Dog Linux: Install, Source and Rescue CDs, Unique 3-ring binder and Personal Install Support](#)

[Yellow Dog Linux: Install, Source and Rescue CDs. Installation Book and Binder. No Support](#)

[Yellow Dog Linux- Install, Source and Rescue CDs](#)

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The following is a short list of software, just to give you an idea what's available:

3D Engine

Crystal Space

Browsers

Netscape Communicator

Mozilla

Databases

MiniSQL

MySQL

PostgreSQL

FrontBase

Desktop Environments

GNOME

KDE

XFree86

Development

perl

PHP

egcs

gdb

DDD

lesstif (Motif-clone)

python

tk

C-Forge

Development libraries

Lesstif

MPICH

PVM

LAM-MPI

Libraries

glibc 2.1.3

binutils 2.9.5.0.22

kde2libs

Emulators

Gameboy

Games

Krilo

xboard

xbill
xboing
xgammon
xjewel
xpilot
xpuzzles

KDE & GNOME games

Graphics
Gimp
Xpaint
Image Viewer
Electric Eyes

Internet

lynx
pine
elm
mutt
ncftp
wget

Mail Servers

CommuniGate Pro
Mail User Agent
Pine

Multimedia

MP3
MpegTV
Q-SeeMe

Office Suites

ApplixWare
Koffice

Programming languages

C, C++, Objective C
Pro Fortan
Octave
perl
TCL/TK
Lesstif (Motif-clone)
python
DDD
Egcs

Project Management

AMS Realtime

Scientific Graphics

Gnuplot

Security

SSH
Kerberos 5

Spreadsheets

GNumeric

Statistical Analysis

Stata

Text Editors

Xemacs
NEdit
LyX

Utilities

BootX
yaboot
MountX
bzip2
cvs

rpm
linuxconf
yup

Web servers & server tools

Apache
Samba
Netatalk
Sendmail
BIND
Urchin
iCal

Window Managers

Sawmill
Enlightenment
IceWM
Window Maker
Afterstep

Word Processor

AbiWord

For their help and input on this piece, we'd especially like to thank Kai Staats, Founder and CEO of [Terra Soft Solutions](#), as well as Logan Johnson, Core Team Member at [Slackware](#), Gael Duval, Creator of [Mandrake](#), Laurence Jacq, Team Member at Mandrake, Matthew Cone, Mastermind of [MacInstruct](#), Michael Coyle, Chief Cook and Bottle Washer of [ResExcellence Linux Icebox](#), Heather Moore, Senior VAR Channel Manager at [TurboLinux](#), Dan Knight, Publisher of [Low End Mac](#), and the good folks on the [MaX mailing list!](#)

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