The Linux Distribution HOWTO

Eric S. Raymond <esr@thyrsus.com> v6.4, 18 September 1999

This document is intended to help new users choose a Linux distribution, and to help experienced users track the state of the Linux market. It does not aim to be a complete list of Linux distributions for all platforms, but instead focuses on leading English-language Intel distributions available on CD-ROM and accessible to Linux novices.

Contents

1 Introduction

There is no single distribution of the Linux software. Instead, there are many such distributions, available both via anonymous FTP and by mail order on CD-ROM.

The purpose of this document is to provide short summaries of the English-language Linux CD-ROM distributions, and to provide pointers for the reader to find more information. A German Distributions HOWTO was formerly maintained by Marco Budde but seems to have disappeared. We are not aware of any distributions in languages other than English and German.

The information presented here is not complete; there are other Linux distributions than are listed here. By the nature of open source software, anyone that changes anything in their Linux installation and makes it available to others somehow is 'a distribution'. A document such as this has to pick somewhere to draw the line. I have picked 'available on CD'. This is by no means the definition of a Linux distribution. There are numerous small distributions that offer things the big distros don't, not the least of which is smallness itself.

The information presented here is not complete; there are other Linux distributions than are listed here. If you are associated with a CD-ROM distribution we don't list, please see **??** (Submissions To This Document) near the end of this document for information on making a submission. It's easy and should take less then five minutes.

For a more complete list of distributions (albeit with sparser information on each) see the *Linux HQ Distributions List* <http://www.linuxhq.com/dist-index.html>.

Disclaimer: We make absolutely *no* guarantee as to the correctness of the information, prices, and ordering details given in this document. Check the last-modified field of each to get an idea of its currency, then go to the vendor's web page for up-to-date information. Furthermore, unless otherwise stated the Linux software comes with *ABSOLUTELY NO WARRANTY*.

Your editor tries to stick to facts in most of this HOWTO, but he has some opinions on the state of the Linux market. If you care what they are, you can read them under **??** (Editorial Recommendations).

Disclosure: I (esr) have no financial connection to any Linux vendor, nor have I accepted any renumeration or perquisites from any vendor other than free product for review (and one T-shirt from Red Hat).

1.1 New versions of this document

This document will be posted monthly to the newsgroups `comp.os.linux.answers` . The document is archived on a number of Linux FTP sites, including `metalab.unc.edu` in `pub/Linux/docs/HOWTO`.

You can also view the latest version of this HOWTO on the World Wide Web via the URL <http://metalab.unc.edu/mdw/HOWTO/Distribution-HOWTO.html>.

Feel free to mail any questions or comments about this HOWTO to Eric S. Raymond, esr@snark.thyrsus.com. Please do *not* send me general Linux questions or requests for help in choosing a distribution unless you're willing to hire me at normal consulting rates; I don't have time to deal with them, and I try to put everything I know about choosing a distribution in this document.

1.2 Recent Changes

Yggdrasil Plug-And-Play and Craftworks Linux seem no longer to be available for sale, and have been dropped. DOSLINUX has also been dropped due to its specialist nature. KRUD, Linux-Mandrake, and LinuxGT have been added.

1.3 Overview of the Linux Market

In the beginning (say, 1993), a Linux distribution was something you downloaded off the Internet onto floppies. Installation was a laborious process and repeated frustrations due to bad media were common.

Then came cheap CD-ROM drives and the CD-ROM, a medium ideally suited for shipping large volumes of operating-system software cheaply. There's a whole mini-industry now built around commercial CD-ROM Linuxes, and (because the vendors have actual cash flow to fund support and marketing) they increasingly dominate the Linux world. Debian is now the only significant non-commercial release, and even it seems to be propagated largely by shovelware CD-ROMs.

Most of the CD-ROM distributions (including Slackware, Yggdrasil and Red Hat) are still available for FTP from the home sites of their developers. But if you have a CD-ROM drive and a few dollars, you will have many more distributions and more support options to choose from (and you'll usually get some useful paper documentation). For more on the details of installation, see the Linux Installation HOWTO, <http://metalab.unc.edu/mdw/HOWTO/Installation-HOWTO.html>.

Prices for CD-ROM distributions of Intel Linuxes start at $20 and top out at a whole $50 (and the extra few dollars can buy real value). Many vendors sell subscription deals that will lower your cost-per-CD for regular updates over the subscription period.

Price correlates with features and quality pretty well (as one would expect in a very competitive market). Your editor recommends paying the few extra dollars for a top-drawer original CD-ROM distribution; this will pay off in fewer installation and administration hassles down the road.

Making good choices is much simpler than it used to be. In 1995-96 the Linux market underwent a serious shakeout, with a very few commercial distributions emerging as leaders while weaker ones disappeared or stagnated. The toll among general-purpose non-commercial distributions has been even fiercer; essentially, only Debian survives in this role.

As a result, the three-tier structure of primary distribution builders, value-added repackagers, and bottom-feeding CD shovellers that used to define the market has nearly collapsed. To be competitive in 1997, a Linux outfit (whether commercial or noncommercial) has to offer reasonable support and behave like a primary distribution builder, whether it's really one or not. So as long as you look for a recent freeze date, it is pretty hard to get stuck with a dud distribution these days.

1.4 Editorial Recommendations

Last section, the facts. In this section, my opinions (for whatever they're worth – and remember the caveat about free advice). There is no substitute for doing your own evaluation based on experience and the data in this guide, and these are intended more to illuminate my possible biases than as a guide to what you should do.

From the beginnings of the Linux CD-ROM industry in 1993 to Fall 1995, Yggdrasil was the king of the hill – it essentially founded the CD-ROM market and then set the standard for everybody else. I used Yggdrasil, and I recommended it over commercial System V versions for its superior documentation, large collection of applications, and enlightened policy of sending free releases to freeware authors and dedicating part of the price of each CD-ROM to financially supporting free software. But Yggdrasil hasn't issued a new release since 1995 and they've been left behind by the market.

I now run Red Hat Linux and am quite satisfied with it. Red Hat's RPM technology currently gives it, IMO, a technical edge over any other vendor. They've made most of the right moves at the right times and I consider them the current market leader.

If you're ideologically wedded to using a non-commercial distribution, Debian seems to me to be the clear choice, the only one left with a serious support team behind it.

These opinions should certainly not be interpreted as an unconditional endorsement; different Linux distributions are optimized for different needs, and yours may well be best served by some other distribution (especially if, unlike me, you're mainly a DOS user and are looking for a distribution tuned for dual-boot systems and being launched from DOS).

Furthermore, industry standing is volatile. By the time you read this, Red Hat or Debian may well have fallen off their games and been displaced by hungrier newcomers.

2 Distributions

All these distributions are available on CD-ROM (some of the non-commercial ones only show up on network-archive snapshots). Most of these are available for free over the network (but the commercial ones won't support you if you buy this way). They are custom-assembled, rather than just being re-packagings of a pre-existing network release.

They are listed in alphabetical order.

2.1 Caldera OpenLinux

Distributor:

Caldera, Inc.
633 South 550 East
Provo, Utah 84606

Net: *info@caldera.com*
WWW: `<http://www.caldera.com>`
FTP: `<ftp://ftp.caldera.com>`
Vox: (801)-377-7678
Fax: (801)-377-8752

Provider's Description:

Caldera is shipping OpenLinux 1.2 in a three-tiered family of products: OpenLinux Lite, OpenLinux Base, and OpenLinux Standard.

OpenLinux Lite is a freely available evaluation of the OpenLinux product (it includes a 90-day evalutation of the Caldera integrated Desttop–the full licensed version of the desktop is included in the Base and Standard products). OpenLinxu Lite can be downloaded from Caldera's ftp site, or obtainded on

CD for the cost of shipping. It is also designed for use by book and software publishers to provide a commercially stable Linux offering with their books and software products.

OpenLinux Base contains everything that is in Lite plus it is a complete, easy-to-install Linux operating system, with integrated Desktop, Internet client and server components, and Intranet connectivity. OpenLinux Base includes Netscape Navigator and full documentation.

OpenLinux Standard includes what is in Base plus more high-end, name brand, commercial software components (such as Netscape FastTrack Web Server, Netscape Navigator Gold Web browser and authoring tools, ADABAS D database, StarOffice productivity suite, Caldera OpenDOS, and NetWare client and administration tools).

All three tiers of the OpenLinux 1.2 release are currently available.

With Caldera OpenLinux, you can see a whole world of powerful new computing, even the power of a UNIX workstation on your PC! By using a Linux kernel, OpenLinux gives you speed and stability that compare to systems costing thousands of dollars. Open Linux also gives you:

- Real multi-tasking runs many text or graphical applications at once; no application can cause another to crash, unlike less robust systems.
- The Linux 2.0 kernel gives super-fast TCP/IP access to the Internet, plus loadable device drivers, for the most efficient use of your system resources.
- Easy-to-follow, quick installation with menu-based choices and auto-detection of your hardware make installation a snap on most systems. The Getting Started Guide (included) provides a step-by-step illustrated procedure, with troubleshooting tips.

No other Linux system includes a complete, integrated desktop interface with configuration tools and graphical editor. Its powerful drag-and-drop capabilities come pre-configured with thousands of icons and application settings. The Desktop provides a convenient place where you can store your favorite programs and data files for instant access. The Desktop gives you:

- Drag-and-drop launching of programs with data files.
- An integrated graphical text editor.
- Easy access to an array of powerful system configuration tools.
- A configurable icon bar, custom layouts, and preference settings.
- Powerful file management using drag-and-drop or graphical dialogs.

Ordering:

By email with PGP key, by phone, by fax, or by conventional mail. Full ordering details are at `<http://www.caldera.com/mpro/orinfo/orderinfo.html>`.

Support:

Caldera is one of the only Linux distributers to offer E-mail and telephone support. OpenLinux Base (E-mail only) and Standard (Telephone and E-mail) users are fully supported (Standard users receive 5 free incident calls during the first 30 days). There is no technical support for the Lite product.

OpenLinux Base and Standard ship with full licensed versions of the Caldera Desktop, which do not expire. OpenLinux Lite ships with a 90-day evaluation version of the Desktop.

Last Freeze Date:

May 1998 (?)

Entry last modified:

13 August 1998

2.2 Debian Linux Distribution

Distributor:

Software in the Public Interest, Inc. PO Box 1326
Boston, Ma. 02117 USA

Net: *info@debian.org*
WWW: <http://www.debian.org>
FTP: <ftp://ftp.debian.org/debian>

Provider's Description:

Debian Linux is the result of a volunteer effort to create a high-quality non-commercial Linux distribution. Debian Linux 2.0 is a complete and fully-functional Unix-compatible operating system for the personal computer. The system uses ELF executables and libc6 (unlikeprevious Debian versions, which used libc5). At present, Debian Linux is available for the IBM PC architecture (386/486/Pentium) and m68k, with versions for Sparc and Alpha promised for 2.1. ARM, PPC, and UltraSparc ports are underway.

Debian Linux is an easy-to-upgrade distribution that mostly consists of freely redistributable software from a number of different sources and systems. Support for shadow passwords is available, although it should be considered experimental in the 1.1 release. Non-free packages may also obtained, making Debian a well-rounded system.

The benefits of Debian Linux are its upgradability, well-defined dependencies between packages, and its open development. It is the only distribution of Linux that is being developed co-operatively by many individuals through the Internet, in the same spirit as Linux and other open-source operating systems. More than 400 package maintainers are working on over 1500 packages and improving Debian Linux. A sophisticated bug tracking system allows users to easily report bugs and security concerns which are quickly dealt with by the Debian community. A new release of the package will soon occur on well-known ftp archives.

Debian Linux is a very dynamic distribution. Snap-shot releases are made about every three months, the ftp archives are updated daily.

For more information about Debian Linux, please refer to the files at <ftp://ftp.debian.org/debian/doc/> or visit our World Wide Web page at <http://www.debian.org/>.

If you're interested in joining this project you are invited to subscribe to either debian-user@lists.debian.org or debian-devel@lists.debian.org by sending a mail to debian-user-request@lists.debian.org (or debian-devel-request respectively) with the word "help" in the subject line.

Internet Access:

Debian Linux is available via anonymous FTP from <ftp://ftp.debian.org/debian/> and on a *mirror* near to you.

Last Freeze Date:

24 July 1998 (2.0)

Entry last modified:

13 Aug 1998

2.3 Linux Pro

Distributor:

WorkGroup Solutions, Inc.
P.O. Box 460190
Aurora, CO 80046-0190

Vox: (303)-699-7470
Fax: (303)-699-2793
Net: *info@wgs.com* (orders)
FTP: <ftp://ftp.wgs.com/pub2/wgs>

Provider's Description:

The charter of the WGS Linux Pro CD is different from all other distributions currently on the market. We are actively pursuing penetration into the commercial marketplace for Linux. Everything we do is aimed at increasing the size of the Linux community, and helping Linux to become THE one true operating system, not just an operating system.

WGS Linux Pro consists of our Main "Stable" Linux CD, for which we select what we consider to be the best Linux distribution available. Then we make bug fixes & minor enhancements. This CD often contains software older than the latest, under the theory that "the latest is not always the greatest". Together with this approach we provide technical support as well as support agreements. For this reason WGS Linux Pro is considered a primary Linux distribution. Optionally, and in addition to our primary CD, we supply supplemental CDs containing all the latest Linux software (including current archives of the tsx-11, metalab, and Red Hat sites). Virtually anything you will get with anyone's Linux product can be found on these supplemental CDs. We continually add more to these supplemental CDs as software becomes available. Even with all this, pricing on our product line is very favorable when correctly compared to other Linux distributions. Also optional (included with Linux Pro+) is a professionally produced and printed manual containing the Linux documentation project and more!

Current version is 4.0a; kernel is 1.2.13 with installable 2.0.x on the CD.

Internet Access:

Look in <http://www.wgs.com> for a list of WGS products, and latest information on the CD-ROM.

Ordering:

WGS Linux Pro is available on CD from dealers and distributors worldwide, and soon from our FTP site.

You may call, fax, email, or mail us, to purchase, or request additional information. We will be happy to respond to any question you have. We accept American Express, Visa, Discover, and MasterCard, or purchase orders with approval of credit.

Miscellaneous:

Complete information is available on our FTP site.

WGS publishes a free E-Mail newsletter on Linux and FlagShip to which you may subscribe by just emailing us your request.

In addition we carry Motif, FlagShip, A line of books, and other products to make your experience with Linux more complete and fulfilling. Check us out!

Last Freeze Date:

1 October 1996.

Entry last modified:

13 March 1997

Editor's comment:

They describe their current distribution as "Red Hat 3.03 plus".

2.4 Red Hat Linux

Distributor:

Red Hat Software
3201 Yorktown Rd, Suite 123 DeKalb Center
Durham, NC 27713

Vox: (800) 546-7274 or (919) 572-6500
Fax: (919) 572-6726
Net: *redhat@redhat.com*
WWW: `<http://www.redhat.com>`
FTP: `<ftp://ftp.redhat.com>`

Provider's Description:

Red Hat 6.0 is based on the 2.2 kernel and is available for Intel, Sparc and Alpha platforms.

Four installation innovations make Red Hat the easiest Linux to install ever. Our graphical installation mode brings you straight up into X for most of the installation. Our boot disk creation script eases selection of the proper boot disk, and it saves your existing network configuration information and XF86Config so you don't have to configure TCP/IP or X! Our FTP install allows you to install simply by downloading 3 floppy disk images – the rest is done automatically! And finally, the installation includes seamless support for PCMCIA devices – install Red Hat on your laptop as easily as on your desktop machine!

After installing Red Hat Linux once, you will never need to reinstall Linux again! The new RPM packaging system is sophisticated enough to allow upgrading to new Red Hat releases without reinstalling your system - no partitioning, no backing up all your files, no headaches.

Ordering:

Available directly from Red Hat Software and most distributors of Linux related products. Please contact Red Hat Software for ordering details (on-line ordering is available through Red Hat's Web). Suggested retail price is for the Intel version is $49.95, for the Sparc and Alpha versions $99.95.

Last Freeze Date:

10 Mar 1999

Entry last modified:

7 Jun 1999.

Editor's Comments:

The big selling point of this distribution is RPM, the Red Hat Package Manager. This piece of software is a remarkable advance; it allows you to cleanly install and de-install applications and operating-system components, including the kernel and OS base itself. RPM is now used as well by essentially all other distributions except Debian.

2.5 Trans-Ameritech Linuxware

Distributor:

Trans-Ameritech
2342A Walsh Avenue
Santa Clara, CA 95051

Net: *info@trans-am.com*
WWW: http://www.trans-am.com
Vox: (408)-727-3883
Fax: (408)-727-3882
BBS: (408)-980-9840

Provider's Description:

Trans-Ameritech has published 10 releases of Linux by early 1997. Traditionally, Trans-Ameritech has set new standards for combining ease of use and straightforward installation, even for a first-time user, with its line of LinuxWare CD-ROMs. This is a flexible, easy-to-install operating system geared toward those interested in learning Unix as well as technical people, students and home PC users.

- New Linux users will appreciate a Windows-based set up program from the CD.
- To minimize the possibility of hardware conflicts many extra kernels are provided for different configurations. They are usable for installation and normal operation.
- Many on-line documents are provided for quick reference, including the Linux Documentation Project files in source, dvi and ps formats.

Many applications are included:

- MS-Windows based X configuration program
- C/C++,Pascal and Ada compilers as well as converters fron Fortran
- TCP/IP networking, UUCP,SLIP,CSLIP,PPP
- Internet access with binaries and sources for FTP,Telnet,News and E-mail
- Multiple terminals and X-Windows environment
- Gnu and international versions of the ispell spell-cheker
- The communications apps:term,minicom,Seyon (X-Windows based)
- Editors:elvis(vi clone),joe,jove,Emacs
- PostScript clone ghostscript
- Object oriented GNU Smalltalk and the Smalltalk interface to X
- TCL/Tk (Powerful scripting language with Motif-like X interface)
- Programs for electrical engineers and ham enthusiasts
- Interviews libraries,include files and doc Word-processor and idraw drawing program
- Typesetting:TeX,LaTeX,xdvi,dvips,Metafont,groff
- Andrew multimedia word prodessor with hyperlinks
- FAX send and receive on either class 1 or class 2 fax modems
- DOOM for game enthusiasts

All the sources are available on the CD-ROM. The often needed sources are uncompressed and can be used directly from the CD-ROM.

An uncompressed Linux filesystem is available for references and disk space conversaion. You can run programs directly from the CD-ROM! There is a large info directory for on-line reference and many manpages.

For hacker's reference, uncompressed FreeBSD and netBSD sources are provided.

Our distribution is targeted for Windows and DOS users who want an easy migration path upwards, rather than for UNIX experts.

Ordering:

Email orders are taken at *order@trans-am.com*

The price for our current release of LinuxWare 2.5 is $19.95

The price for a package order: LinuxWare 2.5,Supplement 5 and Supplement 4 (Ultimate LinuxWare Bundle) in one shipment is $30

If you order with a credit card (VISA, MC, AmEx, Discovery), please, indicate the card number, expiration date and your mailing address.

Shipping and handling in US: single CD-ROM or Ultimate LinuxWare Bundle is $5(first class US mail).

Overseas shipping is $8 for single CD-ROM , $12 for the bundle.

COD is available in the US only for $4.50. California residents, please add 7.75% sales tax.

Annual subscription (4 releases) is available for $80 plus S&H (note: there are 4 shipments in a subscription). Example: subscription in US is:$80+$5x4=$100. Subscription in Europe/Japan etc. $80 + $8x4 = $112.

Miscellaneous:

If you have any further questions,please contact us through E-mail: info@trans-am.com or order@trans-am.com.

Last Freeze Date:

January 1997 (Supplement 5)

Entry last modified:

13 August 1998

2.6 Slackware

Distributor:

Walnut Creek CDROM
4041 Pike Lane, Suite D
Concord, CA 94520

Net: *info@cdrom.com* (information), *order@cdrom.com* (orders), *support@cdrom.com* (support).

Provider's Description:

Ftp.cdrom.com is the home of Slackware Linux. We are the publishers of the Official Slackware Linux CDROM. Our distribution is a 4-disc set with the current version being Slackware 96. The current disc is based on the 2.0.34 kernel.

Slackware Linux is a full featured distribution of the Linux operating system designed for 386/486 computers with a 3.5" floppy and CD-ROM drive.

Internet Access:

WWW: <http://www.cdrom.com/titles/os/slack96.htm>
FTP: <ftp:ftp.cdrom.com/pub/linux/slackware>

Ordering:

The cost of the CD-ROM set from Walnut Creek is $39.95.

Last Freeze Date:

July 1998 (3.5)

Entry last modified:

13 August 1998.

2.7 S.u.S.E.

Distributor:

S.u.S.E., Inc.
458 Santa Clara Ave
Oakland CA 94610 USA

Net: *info@suse.com*
WWW: <http://www.suse.com>
FTP: <ftp://ftp.suse.com>
Vox: +1-510-835-7873 Fax: +1-510-835-7875 fax

Provider's Description:

S.u.S.E. Linux offers users of all levels, from novice to expert, quick and easy entry into world of Linux and Unix. Resources such as a menu-driven installation from CD-ROM, a modular boot diskette, 400-page reference book and S.u.S.E.'s own system administration tool, YaST allow one to quickly get Linux installed and running, and to keep it running smoothly.

Furthermore, S.u.S.E. offers a series of supported X servers, which support the newest graphics cards. These servers are created in cooperation with the XFree86 (tm) development team. See the following URL for more details: <http://www.suse.de/XSuSE>.

New in S.u.S.E. Linux 5.3:

- Kernel 2.0.35
- KDE 1.0
- GIMP 1.0
- SaX (SuSE advanced XF86 configuration tool)

Quick overview of other features:

- The Linux OS, over 875 software packages, including complete sources and live file system on 4 CD-ROMs
- 400 page reference book
- Packages in RPM format; TGZ packages installable
- System V compatible boot concept, compliance with file system standard