LDP HOWTO-INDEX

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This document contains an index to the Linux HOWTOs as well as other information about the HOWTO project.

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Chapter 1. What Are Linux HOWTOs?

Linux HOWTOs are documents which describe in detail a certain aspect of configuring or using Linux. For example, there is the *Installation HOWTO*, which gives instructions on installing Linux, and the *Mail Administrator HOWTO*, which describes how to set up and configure mail under Linux. Other examples include the *Net HOWTO* and the *Printing HOWTO*.

HOWTOs are comprehensive docs - much like an FAQ but generally not in question-and-answer format. However, many HOWTOs contain a FAQ section at the end.

There are several HOWTO formats available: plain text, PostScript, PDF, and HTML.

Chapter 2. Where Can I Get Linux HOWTOs?

HOWTOs can be retrieved via anonymous FTP from *ftp://www.ibiblio.org/pub/Linux/docs/HOWTO/* as well as from many mirror sites around the world. Please use a mirror site if possible.

You can also browse HOWTOs in HTML format or grab Linux-html-HOWTOs.tar.gz for viewing on your own workstation. The files will be extracted into *HOWTO/*.

Other formats can be accessed from the HOWTO documents page of the LDP.

Many mirror sites mirror the HTML files. *tldp.org* is heavily used, so please use a mirror site if possible.

Chapter 3. HOWTO Translations

Some HOWTO translations are available on ibiblio.org and mirrors around the world. So far, there are:

- Chinese (zh)
- Croatian (hr)
- French (fr)
- German (de)
- Hebrew
- Hellenic (el)
- Indonesian (id)
- Italian (it)
- Japanese (ja)
- Korean (ko)
- Polish (pl)
- Romanian (ro)
- Russian (ru)
- Slovenian (sl)
- Spanish (es)
- Swedish (sv)
- Turkish (tr)

If you know of any other translation projects, please let us know and they will be added to this list. If you are interested in getting your translations archived on ibiblio.org, please read the directory structure specification at http://ibiblio.org/pub/Linux/docs/HOWTO/translations/Directory-Structure and contact the LDP.

Chapter 4. Categorized List of HOWTOs

This is a categorized list of the currently available HOWTOs. It is the hope that by categorizing this information it will be easier for you to find the information that you are looking for.

Special Thanks to David Merrill for his extensive work on the initial categorization of the HOWTO documents.

4.1. The Linux OS

Topics covered in this section include:

Section 4.1.1 Getting Started
Section 4.1.2 Switching from Other Operating Systems
Section 4.1.3 Distributions
Section 4.1.4 Installation
Section 4.1.5 Kernel
Section 4.1.6 Boot Loaders and Booting the OS
Section 4.1.7 Parallel Processing
Section 4.1.8 Partitions and Filesystems
Section 4.1.9 RAID
Section 4.1.10 Printing
Section 4.1.11 Shell
Section 4.1.12 Using Linux

4.1.1. Getting Started

- INFO-SHEET, *Linux Information Sheet*

  Updated: Sep 1998. Provides basic information about the Linux operating system, including an explanation of Linux, a list of features, some requirements, and some resources.
- Unix-and-Internet-Fundamentals-HOWTO, *The Unix and Internet Fundamentals HOWTO*

  Updated: Aug 2013. Describes the working basics of PC-class computers, Unix-like operating systems, and the Internet in non-technical language.

4.1.2. Switching from Other Operating Systems

- DOSEMU-HOWTO, *The dosemu HOWTO*

  Updated: Dec 2002. DOSEMU stands for DOS Emulation, and is an application that enables the Linux OS to run many DOS programs.
- DOS-Win-to-Linux-HOWTO, *From DOS/Windows to Linux HOWTO*

  Updated: Aug 1999. Written for all the DOS and Windows users who have decided to switch to Linux.

- Linux+Windows-HOWTO, *Linux + Windows HOWTO*

  Updated: Dec 2001. Aimed at assisting those who wish to use the features of both Linux and Windows on the same host.
- VMS-to-Linux-HOWTO, *From VMS to Linux HOWTO*

  Updated: Sep 2004. Aimed at all those who have been using VMS and now need or want to switch to Linux.

4.1.3. Distributions

- *Linux From Scratch HOWTO*

  Describes the process of creating your own Linux system from scratch from an already installed Linux distribution, using nothing but the source code of software that we need.

  Replaced by the Linux From Scratch book.

4.1.4. Installation

- Pre-Installation-Checklist, *GNU/Linux Pre-Installation Checklist*

  Updated: Nov 2000. An aide-memoire which may make installation of Linux a pleasant experience for you.
- Installation-HOWTO, *The Linux Installation HOWTO*

  Updated: Jul 2002. How to obtain and install Linux software. It is the first document which a new Linux user should read to get started.
- Post-Installation-Checklist, *GNU/Linux Post-Installation Checklist*

  Updated: Jun 2001. Provides a checklist for steps you should take immediately after installing GNU/Linux.
- Compaq-Remote-Insight-Board-HOWTO, *HOWTO Use a Compaq Remote Insight Lights Out Edition for a Headless, Remote Linux Installation*

  Updated: Apr 2002. Describes the installation of Linux on a headless Compaq ProLiant server with a Compaq Remote Insight Lights-Out Edition card without physical access to the system.
- Debian-Jigdo, *Debian Jigdo mini-HOWTO*

  Updated: Dec 2005. Describes why you should use jigdo (a tool for obtaining Debian ISOs), a little bit about how it works and how you use it to get and update Debian ISOs.
- Glibc-Install-HOWTO, *Glibc Installation HOWTO*

  Updated: Mar 2004. Explains how you install a new version of glibc on your system.
- Hardware-HOWTO, *Linux Hardware Compatibility HOWTO*

  Updated: May 2007. Lists most of the hardware supported by Linux and helps you locate any necessary drivers.
- Installfest-HOWTO, *Linux Installfest HOWTO*

Updated: Jan 2012. Provides some guidelines that should help you run a successful installfest.

- Install-From-ZIP, *Linux Install From PPA-Zip drive mini-HOWTO*

Updated: Apr 1998. How to install Linux from a parallel port zip drive using the Slackware Linux distribution.

- Install-Strategies, *Linux Installation Strategies*

Updated: May 2001. Discusses a few installation strategies for those who intend to dual-boot between Windows and Linux.

- Linux+DOS+Win95+OS2, *The Linux-DOS-Win95-OS2 mini-HOWTO*

Updated: Nov 1997. Presents a procedure to make 4 operating systems co-exist on a single hard disk.

- Linux+FreeBSD, *The Linux+FreeBSD mini-HOWTO*

Updated: Mar 2000. How to use Linux and FreeBSD on the same system.

- Linux+Solaris, *Linux+Solaris mini-HOWTO*

Updated: Apr 2000. Describes how to use Solaris and Linux together on one machine. It addresses common questions like multibooting and file-sharing.

- Linux+Win95, *Linux + Windows 95 mini-HOWTO*

Updated: Apr 2001. Details how to install Linux on a machine that currently runs Windows 95.

- Linux+WinNT, *Linux+WindowsNT mini-HOWTO*

Updated: Jul 2010. Covers some ways on how to install both Linux and Windows NT on the same computer and how to boot either of them from within LILO menu.

- PLIP, *LINUX PLIP mini-HOWTO*

Updated: Mar 1998. Will hopefully let you build and use a Parallel Line Interface Protocol.

- PLIP-Install-HOWTO, *PLIP Install HOWTO*

Updated: Jul 2002. How to install a Gnu/Linux distribution on a computer without Ethernet card, nor cdrom, but just a local floppy drive and a remote nfs server attached by a Null-Modem parallel cable.

- RedHat-CD-HOWTO, *Burning a RedHat CD HOWTO*

Updated: Oct 2003. How to make your own CDs from the Red Hat Linux distribution equivalent to the ones commercially available from Red Hat.

- Saving-Space, *Saving Space mini-HOWTO*

Updated: Apr 1999. Directions for squeezing your Linux installation into the least possible space. Particularly aimed at notebook users.

- Small-Memory, *Small Memory Mini-HOWTO*

Updated: Dec 2000. How to run Linux on a system with a small amount of memory.

- Swap-Space, *Linux Swap Space Mini-HOWTO*

Updated: Dec 2002. How to share your Linux swap partition with Windows.

- TimeSys-Linux-Install-HOWTO, *TimeSys Linux Install HOWTO*

Updated: May 2005. A quick-start guide for installing TimeSys Linux on a typical desktop workstation.

- Upgrade, *Upgrading Your linux Distribution mini-HOWTO*

  Updated: Mar 2002. Hints and tips on upgrading from one linux distribution to another.

4.1.5. Kernel

- BogoMips, *BogoMips mini-HOWTO*

  Updated: Mar 2006. Some information about BogoMips, compiled from various sources.
- BootPrompt-HOWTO, *The Linux BootPrompt HOWTO*

  Updated: Mar 2003. A compilation of all the possible boot time arguments that can be passed to the Linux kernel at boot time. Includes all kernel and device parameters.
- IO-Perf-HOWTO, *I/O Performance HOWTO*

  Updated: May 2002. Covers information on available patches for the 2.4 kernel that will improve the I/O performance of your Linux operating system.
- Kernel-HOWTO, *The Linux Kernel HOWTO*

  Removed: November 2003. This HOWTO has been removed for review.
- KernelAnalysis-HOWTO, *KernelAnalysis-HOWTO*

  Updated: Mar 2003. Explains some things about the Linux Kernel, such as the most important components, how they work, and so on.
- Kerneld, *The Linux kerneld mini-HOWTO*

  Updated: May 2000. Explains how you can use the kerneld function in the Linux kernels.
- libdc1394-HOWTO, *Libdc1394 Library Support for IEEE 1394 Cameras HOWTO*

  Updated: Apr 2007. Discusses how to set up the libdc1394 library on Linux for support of IEEE 1394 (FireWire) cameras.
- Linux-Crash-HOWTO, *Linux Crash HOWTO*

  Updated: Jan 2002. Describes the installation and usage of the LKCD (Linux Kernel Crash Dump) package.
- Module-HOWTO, *Linux Loadable Kernel Module HOWTO*

  Updated: Sep 2006. Explains what Linux loadable kernel modules (LKMs) are, and how to use and create them.
- Modules, *Linux Modules Installation mini-HOWTO*

  Updated: n/a How to successfully set up Linux with modules configured and working.
- PA-RISC-Linux-Boot-HOWTO, *PA-RISC/Linux Boot HOWTO*

  Updated: Jun 2006. Outlines the procedures for getting the current PA-RISC/Linux development kernel to boot on your PA-RISC system. It also explains the functions of PALO, the kernel loader for PA/Linux.
- Process-Accounting, *Enabling Process Accounting on Linux*

  Updated: Feb 2001. Describes the basics of enabling process accounting on Linux.

4.1.6. Boot Loaders and Booting the OS

- Bootdisk-HOWTO, *The Linux Bootdisk HOWTO*

  Updated: Jan 2002. How to design and build your own boot/root diskettes for Linux.
- Disk-on-Chip-HOWTO, *Disk on Chip HOWTO*

  Updated: Sep 2006. Discusses how to make the Flash Drives Linux bootable. Describes how to boot from such a drive, instead of from the normal hard drive.
- From-PowerUp-To-Bash-Prompt-HOWTO, *From Power Up To Bash Prompt*

  Updated: Nov 2000. A brief description of what happens in a Linux system from the time that you turn on the power, to the time that you log in and get a bash prompt.
- LILO, *LILO mini-HOWTO*

  Updated: Jul 2010. Lilo (LILO) is the most used Linux Loader for the x86 flavour of Linux. This describes some typical Lilo installations. Intended as a supplement to the Lilo User's Guide.
- Linux-i386-Boot-Code-HOWTO, *Linux i386 Boot Code HOWTO*

  Updated: Feb 2004. Describes Linux i386 boot code, serving as a study guide and source commentary. In addition to C-like pseudocode source commentary, it also presents keynotes of toolchains and specs related to kernel development.
- Linux-Init-HOWTO, *Linux 2.4.x Initialization for IA-32 HOWTO*

  Updated: May 2001. A description of the Linux 2.4 kernel initialization sequence on IA-32 processors.
- Linux+NT-Loader, *NT OS Loader + Linux mini-HOWTO*

  Updated: Sep 1997. Describes the use of the Windows NT boot loader to start Linux. This procedures have been tested with Windows NT 4.0 WS and Linux 2.0.
- Linux+Win9x+Grub-HOWTO, *Linux+Win9x+Grub HOWTO*

  Updated: Jan 2002. How to use the GRUB bootloader to turn your computer into a Windows + Linux dual boot machine, without affecting your current Linux installation.
- Loadlin+Win95-98-ME, *The Loadlin+Win95/98/ME mini-HOWTO*

  Updated: Feb 2001. Describes how to use Loadlin with Windows 95/98/ME to boot to Linux.
- MILO-HOWTO, *Alpha Miniloader HOWTO*

  Updated: Nov 2000. Describes the Alpha Linux Miniloader (also known as MILO), a program for Alpha-based systems that can be used to initialize the machine and load Linux.
- Multiboot-with-GRUB, *Multiboot with GRUB Mini-HOWTO*

  Updated: Jan 2001. How to install Windows 98, Windows 2000, DOS and Linux using GRUB.
- Multiboot-with-LILO, *Win95 + WinNT + Linux multiboot using LILO mini-HOWTO*

  Updated: Mar 1998. How to multiboot between Windows 95, Windows NT, and Linux.
- PA-RISC-Linux-Boot-HOWTO, *PA-RISC/Linux Boot HOWTO*

Updated: Jun 2006. Outlines the procedures for getting the current PA-RISC/Linux development kernel to boot on your PA-RISC system. It also explains the functions of PALO, the kernel loader for PA/Linux.

- SRM-HOWTO, *SRM Firmware HOWTO*

  Updated: Nov 2000. Describes how to boot Linux/Alpha using the SRM console, which is the console firmware also used to boot Compaq Tru64 Unix (also known as Digital Unix and OSF/1) and OpenVMS.

4.1.7. Parallel Processing

- Parallel-Processing-HOWTO, *Linux Parallel Processing HOWTO*

  Updated: Jun 2004. Discusses the four basic approaches to parallel processing that are available to Linux users: SMP Linux systems, clusters of networked Linux systems, parallel execution using multimedia instructions (i.e., MMX), and attached (parallel) processors hosted by a Linux system.
- SMP-HOWTO, *Linux SMP HOWTO*

  Updated: Jul 2002. Reviews main issues related to SMP configuration under Linux.

4.1.8. Partitions and Filesystems

- Filesystems-HOWTO, *Filesystems HOWTO*

  Updated: Jan 2007. About filesystems and accessing filesystems.
- Cryptoloop-HOWTO, *Cryptoloop HOWTO*

  Updated: Mar 2004. Eplains how to create encrypted file systems using the Cryptoloop functionality. Cryptoloop is part of the CryptoAPI in the 2.6 Linux kernel series.
- Disk-Encryption-HOWTO, *Disk Encryption HOWTO*

  Updated: Nov 2004. A method is described for encrypting a hard disk, either in whole or in part, with the encryption key stored on an external medium for increased security.
- Ext2fs-Undeletion, *Linux Ext2fs Undeletion mini-HOWTO*

  Updated: Feb 1999. Presents a discussion of how to retrieve deleted files from a Second Extended File System.
- LVM-HOWTO, *Logical Volume Manager HOWTO*

  Updated: Nov 2006. Describes how to build, install, and configure LVM for Linux.
- NFS-Root, *NFS-Root mini-HOWTO*

  Updated: Sep 2002. How to setup a ``disc-less'' Linux workstation, which mounts it's root filesystems via NFS.
- NFS-Root-Client-mini-HOWTO, *NFS-Root-Client Mini-HOWTO*

  Updated: Feb 1999. How to create client root directories on a server that is using NFS Root mounted clients.
- Partition, *Linux Partition HOWTO*

Updated: Dec 2005. Teaches you how to plan and layout disk space for your Linux system.

- Partition-Rescue, *Partition Rescue HOWTO*

Updated: Nov 2008. Describes how to rescue your Linux partition if it has been deleted.

- Partition-Mass-Storage-Definitions-Naming-HOWTO, *Partitions-Mass-Storage-Definitions-Naming-HOWTO*

Updated: May 2009.

- Partition-Mass-Storage-Dummies-Linux-HOWTO, *Partition-Mass-Storage-Dummies-Linux-HOWTO*

Updated: Apr 2009. A document about partitioning usual mass storage that can be magnetic rotating hard drives or Solid State Drives (SSD - including flash cards or USB keys).

- SquashFS-HOWTO, *SquashFS HOWTO*

Updated: Jul 2008. Describes the usage of SquashFS - a highly-compressed file system for Linux, which is intended for use in tiny/embedded Linux systems, as well as for read-only archiving and general in-file system compression.

- Swap-Space, *Linux Swap Space Mini-HOWTO*

Updated: Dec 2002. How to share your Linux swap partition with Windows.

- UMSDOS-HOWTO, *UMSDOS HOWTO*

Updated: Dec 2001. Explains how to use Umsdos (a linux file system) in different configurations, and its operation.

4.1.9. RAID

- Antares-RAID-sparcLinux-HOWTO, *Antares-RAID-sparcLinux-HOWTO*

Updated: May 2002. Describes how to install, configure, and maintain a hardware RAID built around the 5070 SBUS host based RAID controller by Antares Microsystems.

- ATA-RAID-HOWTO, *Linux ATA RAID HOWTO*

Updated: May 2002. Explains how to install Linux on an Intel Pentium compatible computer with an ATA RAID Controller (onboard chip or seperate card), single or multiple processors and at least two hard disks.

- Boot+Root+Raid+LILO, *Boot + Root + Raid + Lilo : Software Raid mini-HOWTO*

Updated: Jul 2000. A cookbook for setting up root raid using the 0.90 raidtools for bootable raid mounted on root using standard LILO.

- DPT-Hardware-RAID-HOWTO, *Linux DPT Hardware RAID HOWTO*

Updated: Aug 2004. How to set up hardware RAID under Linux.

- Root-RAID-HOWTO, *Root RAID HOWTO cookbook*

Updated: Jul 2000. This document only applies to the OLD raidtools, versions 0.50 and under. The workarounds and solutions addressed in this HOWTO have largely been made obsolete by the vast improvment in the 0.90 raidtools and accompanying kernel patch to the 2.0.37, 2.2x and 2.3x series kernels. You may find the detailed descriptions useful, particularly if you plan to run root raid or use initrd.

original description: A cookbook for creating a root mounted raid filesystem and companion fallback rescue system using linux initrd. Step-by-step instructions for both raid1 and raid5 md0 devices.

- Software-RAID-HOWTO, *Software-RAID HOWTO*

  Updated: Jun 2004. This HOWTO is deprecated; the Linux RAID HOWTO is maintained as a wiki by the linux-raid community at http://raid.wiki.kernel.org/ How to use Software RAID under Linux. It addresses a specific version of the Software RAID layer, namely the 0.90 RAID layer made by Ingo Molnar and others. This is the RAID layer that will be standard in Linux-2.4, and it is the version that is also used by Linux-2.2 kernels shipped from some vendors. The 0.90 RAID support is available as patches to Linux-2.0 and Linux-2.2, and is by many considered far more stable that the older RAID support already in those kernels.
- Software-RAID-0.4x-HOWTO, *Software-RAID HOWTO (earlier implementation)*

  Updated: Nov 1998. How to use Software RAID under Linux. RAID stands for "Redundant Array of Inexpensive Disks". For users of the Linux MD kernel extension, the associated tools, and their use. This HOWTO addresses an earlier implementation.

4.1.10. Printing

- Printing-HOWTO, *The Linux Printing HOWTO*

  Updated: Jun 2003. A collection of information on how to generate, preview, print and fax anything under Linux (and other Unices in general).
- Printing-Usage-HOWTO, *The Linux Printing Usage HOWTO*

  Updated: Feb 1998. How to use the print system under Linux.
- Debian-and-Windows-Shared-Printing, *Debian and Windows Shared Printing mini-HOWTO*

  Updated: Jul 2005. Demonstrates how to use command-line tools to configure your Debian system for printing. It explains how to send documents from Linux to Windows printers and how to share Linux printers with Windows PCs.
- Print2Win, *The Linux Print2Win mini-HOWTO*

  Updated: Jul 2002. Contains the general configuration to get linux printing to a Windows print share.

4.1.11. Shell

- Adv-Bash-Scr-HOWTO, *Advanced Bash-Scripting HOWTO*

  A guide to shell scripting, using Bash.

  Replaced by the Advanced Bash-Scripting Guide.
- Bash-Prompt-HOWTO, *Bash Prompt HOWTO*

  Updated: Nov 2003. Creating and controlling terminal and xterm prompts is discussed, including incorporating standard escape sequences to give username, current working directory, time, etc.
- Bash-Prog-Intro-HOWTO, *BASH Programming - Introduction HOWTO*

  Updated: Jul 2000. This article intends to help you to start programming basic-to-intermediate shell scripts.

4.1.12. Using Linux

- RPM-HOWTO, *RPM HOWTO - RPM at Idle*

  Updated: Nov 1999. RPM is the RPM Package Manager. It is an open packaging system available for anyone to use. It allows users to take source code for new software and package it into source and binary form such that binaries can be easily installed and tracked and source can be rebuilt easily. It also maintains a database of all packages and their files that can be used for verifying packages and querying for information about files and/or packages.
- Software-Building-HOWTO, *Building and Installing Software Packages for Linux*

  Updated: Jul 1999. A comprehensive guide to building and installing "generic" UNIX software distributions under Linux.
- Tips-HOWTO, *The Linux Tips HOWTO*

  Updated: Jun 1998. Contains those hard to find hints and tweekings that make Linux a bit nicer.

4.2. System Administration and Configuration

Topics covered in this section include:

Section 4.2.1 Configuration / Installation
Section 4.2.2 Benchmarking
Section 4.2.3 Clustering
Section 4.2.4 Backup
Section 4.2.5 Recovery
Section 4.2.6 Security

4.2.1. Configuration / Installation

- Autodir-HOWTO, *Autodir HOWTO*

  Updated: May 2007. Autodir installation, configuration and other issues related to Autodir.
- Battery-Powered, *Battery Powered Linux Mini-HOWTO*

  Updated: Jul 2003. How to optimize and configure power management on a ready-configured Linux system for use on battery-powered laptops.
- Bootdisk-HOWTO, *The Linux Bootdisk HOWTO*

  Updated: Jan 2002. How to design and build your own boot/root diskettes for Linux.
- BootPrompt-HOWTO, *The Linux BootPrompt HOWTO*

  Updated: Mar 2003. A compilation of all the possible boot time arguments that can be passed to the Linux kernel at boot time. Includes all kernel and device parameters.
- Config-HOWTO, *Configuration HOWTO*

Updated: May 2006. Document from which every others can refer to configure most common hardware and services.

- Debian-Binary-Package-Building-HOWTO, *Debian Binary Package Building HOWTO*

Updated: Aug 2005. Shows how to build a minimal Debian .deb package.

- Debian-and-Windows-Shared-Printing, *Debian and Windows Shared Printing mini-HOWTO*

Updated: Jul 2005. Demonstrates how to use command-line tools to configure your Debian system for printing. It explains how to send documents from Linux to Windows printers and how to share Linux printers with Windows PCs.

- Debian-Jigdo, *Debian Jigdo mini-HOWTO*

Updated: Dec 2005. Describes why you should use jigdo (a tool for obtaining Debian ISOs), a little bit about how it works and how you use it to get and update Debian ISOs.

- Filesystems-HOWTO, *Filesystems HOWTO*

Updated: Jan 2007. About filesystems and accessing filesystems.

- Glibc-Install-HOWTO, *Glibc Installation HOWTO*

Updated: Mar 2004. Explains how you install a new version of glibc on your system.

- HP-HOWTO, *HP HOWTO - Utilisation and Configuration Guide of HP Products under Linux*

Updated: December 2001. Describes the use of products available in the Hewlett-Packard (HP) catalog with Linux and some free software.

- Installation-HOWTO, *The Linux Installation HOWTO*

Updated: Jul 2002. How to obtain and install Linux software. It is the first document which a new Linux user should read to get started.

- Installfest-HOWTO, *Linux Installfest HOWTO*

Updated: Jan 2012. Provides some guidelines that should help you run a successful installfest.

- Jabber-Server-Farming-HOWTO, *Jabber Server Farming How-To*

Updated: Jun 2002. Provide Jabber admins a look into the present and future of Jabber Server Farming.

- Kernel-HOWTO, *The Linux Kernel HOWTO*

Removed: November 2003. This HOWTO has been removed for review.

- KernelAnalysis-HOWTO, *KernelAnalysis-HOWTO*

Updated: Mar 2003. Explains some things about the Linux Kernel, such as the most important components, how they work, and so on.

- Linux-Crash-HOWTO, *Linux Crash HOWTO*

Updated: Jan 2002. Describes the installation and usage of the LKCD (Linux Kernel Crash Dump) package.

- LVM-HOWTO, *Logical Volume Manager HOWTO*

Updated: Nov 2006. Describes how to build, install, and configure LVM for Linux.

- MultiOS-HOWTO, *Managing Multiple Operating Systems HOWTO*

Updated: Feb 2000. Covers the procedures for using removable hard disks to install and manage multiple alternative operating systems while leaving a single fixed disk to permanently house and protect the primary operating system.

- Path, *PATH HOWTO*

  Updated: Nov 1997. Describes common tricks and problems with Unix / Linux environment variables, especially with PATH variable.
- Public-Web-Browser, *Linux web browser station*

  Updated: Oct 2000. Describes the setup of Internet kiosk-type system based on Linux to be deployed to provide public Internet/webmail access.
- Quota, *Quota mini-HOWTO*

  Updated: Aug 2003. How to enable file system quota on a Linux host, assigning quota for users and groups, as well as the usage of miscellaneous quota commands.
- Spam-Filtering-for-MX, *Spam Filtering for Mail Exchangers*

  Updated: Sep 2004. How to reject junk mail in incoming SMTP transactions.
- SquashFS-HOWTO, *SquashFS HOWTO*

  Updated: Jul 2008. Describes the usage of SquashFS - a highly-compressed file system for Linux, which is intended for use in tiny/embedded Linux systems, as well as for read-only archiving and general in-file system compression.
- TimePrecision-HOWTO, *Managing Accurate Date and Time HOWTO*

  Updated: Nov 2005. Explains the time mechanisms on Linux, what are time zones, and precision with NTP.
- TimeSys-Linux-Install-HOWTO, *TimeSys Linux Install HOWTO*

  Updated: May 2005. A quick-start guide for installing TimeSys Linux on a typical desktop workstation.
- Visual-Bell, *Visible bell mini-Howto*

  Updated: Dec 2001. How to use termcap to configure a visual bell on one's system and describes how to disable audible bells on demand.

4.2.2. Benchmarking

- Benchmarking-HOWTO, *Linux Benchmarking HOWTO*

  Updated: Aug 1997. Discusses some issues associated with the benchmarking of Linux systems and presents a basic benchmarking toolkit.

4.2.3. Clustering

- Beowulf-HOWTO, *Beowulf HOWTO*

  Updated: Jan 2005. Describes step by step instructions on building a Beowulf cluster. This is a Red Hat and LAM specific version of this document.
- Mock-Mainframe, *The Mock Mainframe Mini-HOWTO*

Updated: Oct 2005. A brief description of a standard way to set up and work with a computer network for a small group of people that is inexpensive to build, easy to administer, and relatively safe.

4.2.4. Backup

- ADSM-Backup, *Linux ADSM mini-HOWTO*

  Updated: Jan 1997. How to install and use a client for the commercial ADSM backup system for Linux/i386.
- Backup-With-MSDOS, *Backup-With-MSDOS mini-HOWTO*

  Updated: Aug 1997. How to use a Linux-compatible tape drive installed on an MS-DOS machine to back up the filesystem of a Linux machine.
- Clone-HOWTO, *HOWTO Clone Disk Images on Linux Booted from a Network*

  Updated: Sep 2002. Describes a setup that allows a machine to boot Linux from BOOTP/TFTP, using the Grub boot loader, and save and restore disk and partition images to and from a TFTP server.
- Linux-Complete-Backup-and-Recovery-HOWTO, *Linux Complete Backup and Recovery HOWTO*

  Updated: Mar 2006. A step-by-step tutorial on how to back up a Linux computer so as to be able to make a bare metal recovery, and how to make that bare metal recovery. Includes some related scripts. *"Bare metal recovery"* is the process of rebuilding a computer after a catastrophic failure.

4.2.5. Recovery

- Ext2fs-Undeletion, *Linux Ext2fs Undeletion mini-HOWTO*

  Updated: Feb 1999. Presents a discussion of how to retrieve deleted files from a Second Extended File System.
- LILO-crash-rescue-HOWTO, *LILO, Linux Crash Rescue HOWTO*

  Removed: November 2003. This HOWTO has been removed for review.
- Linux-Complete-Backup-and-Recovery-HOWTO, *Linux Complete Backup and Recovery HOWTO*

  Updated: Mar 2006. A step-by-step tutorial on how to back up a Linux computer so as to be able to make a bare metal recovery, and how to make that bare metal recovery. Includes some related scripts. *"Bare metal recovery"* is the process of rebuilding a computer after a catastrophic failure.

4.2.6. Security

- Bridge+Firewall, *Linux Bridge+Firewall Mini-HOWTO*

  Updated: Dec 1997. A bridge is an intelligent connection wire between two network cards. A firewall is an intelligent insulator.
- Cryptoloop-HOWTO, *Cryptoloop HOWTO*

  Updated: Mar 2004. Eplains how to create encrypted file systems using the Cryptoloop functionality. Cryptoloop is part of the CryptoAPI in the 2.6 Linux kernel series.

- Disk-Encryption-HOWTO, *Disk Encryption HOWTO*

  Updated: Nov 2004. A method is described for encrypting a hard disk, either in whole or in part, with the encryption key stored on an external medium for increased security.
- Domain, *Setting Up Your New Domain Mini HOWTO*

  Updated: Oct 2000. Outlines the things you will probably have to do when you want to setup a network of computers under your own domain. Covers configuration of network parameters, network services, and security settings.
- Encrypted-Root-Filesystem-HOWTO, *Encrypted Root Filesystem HOWTO*

  Updated: Mar 2005. Explains how to make your personal data secure by encrypting your Linux root filesystem using strong cryptography.
- Firewall-HOWTO, *Firewall and Proxy Server HOWTO*

  Updated: Feb 2000. Designed to describe the basics of firewall systems and give you some detail on setting up both a filtering and proxy firewall on a Linux based system.
- Firewall-Piercing, *Firewall Piercing mini-HOWTO*

  Updated: Nov 2001. Directions for using ppp over telnet to do network activities transparently through an Internet firewall.
- IPCHAINS-HOWTO, *Linux IPCHAINS HOWTO*

  Updated: Jul 2000. How to obtain, install and configure the enhanced IP firewalling chains software for Linux, and some ideas on how you might use them.
- Kerberos-Infrastructure-HOWTO, *Kerberos Infrastructure HOWTO*

  Updated: May 2004. Describes the design and configuration of a Kerberos infrastructure for handling authentication with GNU/Linux. It details steps for a best practices method of setting up servers, Kerberos software,conversion of legacy systems, and answers frequently asked questions.
- Secure-BootCD-VPN-HOWTO, *Secure Boot CDs for VPN HOWTO*

  Updated: May 2007. Describes the creation of live boot CDs used to make secure VPN connections from anywhere (over the Internet) to internal networks that have firewall exposure to the Internet.
- Secure-POP+SSH, *Secure POP via SSH mini-HOWTO*

  Updated: Sep 1998. How to set up secure POP connections using ssh.
- Security-HOWTO, *Linux Security HOWTO*

  Updated: Jan 2004. A general overview of security issues that face the administrator of Linux systems.
- Security-Quickstart-HOWTO, *Security Quick-Start HOWTO for Linux*

  Updated: Jul 2002. An overview of the basic steps required to secure a Linux installation from intrusion.
- Security-Quickstart-Redhat-HOWTO, *Security Quick-Start HOWTO for Redhat Linux*

  Updated: Jul 2002. An overview of the basic steps required to secure a Linux installation from intrusion (*Redhat specific version*).
- Sentry-Firewall-CD-HOWTO, *Sentry Firewall CD HOWTO*

Updated: Aug 2003. An introduction on how the Sentry Firewall CDROM works and how to get started using the system.

- Shadow-Password-HOWTO, *Linux Shadow Password HOWTO*

Updated: Apr 1996. How to obtain, install, and configure the Linux password Shadow Suite.

- User-Authentication-HOWTO, *User Authentication HOWTO*

Updated: Feb 2003. Explains how user and group information is stored and how users are authenticated on a Linux system (PAM), and how to secure you system's user authentication.

4.3. Hardware

Topics covered in this section include:

Section 4.3.1 General
Section 4.3.2 Platforms
Section 4.3.3 Video Cards
Section 4.3.4 CPUs / Architectures
Section 4.3.5 CD-ROM / DVD-ROM Drives
Section 4.3.6 Optical Disks
Section 4.3.7 Keyboard and Console
Section 4.3.8 Digital Cameras
Section 4.3.9 Graphic Tablets
Section 4.3.10 Diskettes
Section 4.3.11 Hard Disks / Storage
Section 4.3.12 Jaz / ZIP Drives
Section 4.3.13 Mice
Section 4.3.14 Modems
Section 4.3.15 Printers / Scanners
Section 4.3.16 Routers
Section 4.3.17 SCSI
Section 4.3.18 Serial Ports
Section 4.3.19 MIDI / Sound Cards
Section 4.3.20 Tape Drives
Section 4.3.21 Touchscreens
Section 4.3.22 UPS
Section 4.3.23 Wireless
Section 4.3.24 Miscellaneous

4.3.1. General

- Hardware-HOWTO, *Linux Hardware Compatibility HOWTO*

Updated: May 2007. Lists most of the hardware supported by Linux and helps you locate any

necessary drivers.
- Unix-Hardware-Buyer-HOWTO, *The Unix Hardware Buyer HOWTO*

  Updated: Apr 2010. This is your one-stop resource for information about how to buy and configure Intel hardware for cheap, powerful Unix systems.

4.3.2. Platforms

- 4mb-Laptops, *4mb Laptop HOWTO*

  Updated: Apr 2000. Put a "grown-up" Linux on a small-spec (4mb RAM, <=200mb hard disk) laptop.
- Beowulf-HOWTO, *Beowulf HOWTO*

  Updated: Jan 2005. Describes step by step instructions on building a Beowulf cluster. This is a Red Hat and LAM specific version of this document.
- Cluster-HOWTO, *Linux Cluster HOWTO*

  Updated: Sep 2005. How to set up high-performance Linux computing clusters.
- Compaq-T1500-HOWTO, *CompaqT1500-Linux HOWTO*

  Updated: Sep 2007. Lists the procedures and tools needed to boot the Compaq T1500, using a Netboot of both the native file system and a generic Linux installation.
- Diskless-HOWTO, *Diskless Nodes HOWTO for Linux*

  Removed: November 2003. This HOWTO has been removed for review.
- Diskless-root-NFS-HOWTO, *Root over nfs clients & server HOWTO*

  Updated: Mar 1999. How to setup a server and configure clients for diskless operation from a network.
- Handspring-Visor, *Handspring-Visor with Linux mini-HOWTO*

  Updated: Jan 2003. Using the Visor with Linux and your USB port.
- HP-HOWTO, *HP HOWTO - Utilisation and Configuration Guide of HP Products under Linux*

  Updated: Dec 2001. Describes the use of products available in the Hewlett-Packard (HP) catalog with Linux and some free software.
- IBM7248-HOWTO, *Installing GNU/Linux on the IBM RS/6000 43P model 7248 HOWTO*

  Updated: Jun 2003. Describes the installation of GNU/Linux on the IBM RS/6000 43P model 7248 series.
- JavaStation-HOWTO, *Linux on the Sun JavaStation NC HOWTO*

  Updated: Oct 2001. Describes how to enable the GNU/Linux OS on the Sun JavaStation NC.
- Kiosk-HOWTO, *Kiosk HOWTO*

  Updated: Oct 1999. Provides a guide for setting up a WWW-based kiosk using Linux, X11R6, FVWM2, Netscape Navigator 4.X, and a customized trackball.
- Mac-Terminal, *The MacTerminal mini-HOWTO*

  Updated: Nov 1997. How to configure the Mac for use as a Linux terminal.

- NC-HOWTO, *Linux Netstation HOWTO*

  Updated: Mar 2004. Describes how to hook up a IBM Netstation to your local network using a Linux box as server.
- NCD-HOWTO, *Linux NCD mini-HOWTO*

  Updated: Dec 2001. Describes how to hook up a NCD ThinSTAR to your local network using a Linux box as server.
- NCD-X-Terminal, *NCD X terminal mini HOWTO*

  Updated: Mar 2000. How to connect an NCD X terminal to a UNIX host.
- openMosix-HOWTO, *The openMosix HOWTO*

  Updated: Jun 2004. A brief description to openMosix, a software package that turns a network of GNU/Linux computers into a computer cluster.
- PalmOS-HOWTO, *Palm OS Desktop HOWTO*

  Updated: Mar 2002. Explains how to use your Palm OS device with a Linux system.
- Psion-HOWTO, *Linux and Psion HOWTO*

  Updated: Nov 2000. How to use Psion palmtops with Linux. Does not cover running Linux on a Psion palmtop.
- Text-Terminal-HOWTO, *Text-Terminal HOWTO*

  Updated: Mar 2013. Explains what text terminals are, how they work, how to install and configure them, and provides some info on how to repair them.
- Thinclient-HOWTO, *Thin Client: New User Guide*

  Updated: Nov 1999. How to turn inexpensive legacy computers into fast terminals.
- VAIO+Linux, *Linux on Sony VAIO mini-HOWTO*

  Updated: Sep 1998. This document explains installation of Linux on Sony VAIO computers.
- VME-HOWTO, *VME HOWTO*

  Updated: Feb 2002. Shows the embedded system community how to run Linux on their VMEbus Pentium and other PCI local bus based VMEbus processor designs.
- Wearable-HOWTO, *Wearable HOWTO*

  Updated: Nov 2000. Nomadism is one of the major trends of our society, now most of the people can work with a laptop computer, but few did the next step: to live, or if you prefer to wear one computer - that is a wearable.

4.3.3. Video Cards

Also see **Applications: Section 4.5.5 Multimedia : Section 4.5.5.2 Video**.

- Framebuffer-HOWTO, *Framebuffer HOWTO*

  Updated: Aug 2010. How to use the framebuffer devices in Linux with a variety of platforms. Also includes how to set up multi-headed displays.

- i810-HOWTO, *i810 with XFree86 4.x HOWTO*

  Updated: May 2001. Describes getting XFree86 4.x running on Intel's i810 graphics chipset by using special features of the 2.4.0 kernel.
- Nvidia-OpenGL-Configuration, *Nvidia OpenGL Configuration mini-HOWTO*

  Updated: Jan 2002. How to install the OpenGL drivers for Nvidia graphics cards on Linux. Also explains how to install XFree86, the OpenGL Utility library (part of Mesa), the OpenGL Utility Toolkit (glut), etc.
- XFree86-R200, *ATI R200 + XFree86 4.x mini-HOWTO*

  Updated: Sep 2003. Describes the procedure of making XFree 4.x run on an ATI R200 (Radeon 8xxx series).

4.3.4. CPUs / Architectures

- Alpha-HOWTO, *Brief Introduction to Alpha Systems and Processors*

  Updated: Jun 1997. A brief overview of existing Alpha CPUs, chipsets and systems.
- Avr-Microcontrollers-in-Linux-Howto, *AVR Microcontrollers in Linux HOWTO*

  Updated: Apr 2009. For readers wishing to program an AVR microcontroller using a GNU/Linux machine.
- CPU-Design-HOWTO, *CPU Design HOW-TO*

  Removed: November 2003. This HOWTO has been removed for review.
- K7s5a-HOWTO, *The Elite's K7s5a mainboard HOWTO*

  Updated: May 2004. Describes how to use Elite's K7s5a board with Linux.
- SPARC-HOWTO, *SPARC-HOWTO*

  Updated: Aug 2004. Describes Linux on SPARC-based workstations.

4.3.5. CD-ROM / DVD-ROM Drives

- CD-Writing-HOWTO, *CD-Writing HOWTO*

  Updated: Jul 2000. Explains how to write CD-ROMs under Linux.
- CDROM-HOWTO, *The Linux CD-ROM HOWTO*

  Updated: Jul 2001. How to install, configure, and use CD-ROM drives under Linux.
- DVD-HOWTO, *Linux DVD HOWTO*

  Updated: Oct 2000. An easy to follow explanation on how to get DVD movie play-back in Linux.
- DVD-Playback-HOWTO, *DVD Playback HOWTO*

  Updated: Feb 2004. This document describes how to view DVD movies on a Linux computer with a DVD drive.

4.3.6. Optical Disks

- Optical-Disk-HOWTO, *Linux Optical Disk HOWTO*

  Updated: May 2003. Describes the installation and configuration of optical disk drives for Linux.

4.3.7. Keyboard and Console

- Keyboard-and-Console-HOWTO, *The Linux keyboard and console HOWTO*

  Updated: Oct 2002. Contains some information about the Linux (v2.0) keyboard and console, and the use of non-ASCII characters.
- BackspaceDelete, *Linux Backspace/Delete mini-HOWTO*

  Updated: Jan 2002. Solutions for having working Backspace and Delete keys on the console and on X.
- Intkeyb, *How to setup international keyboard in X Windows*

  Updated: Nov 2002. This xmodmap and kimap solutions will work for you in setting up any international keyboard for (Debian, RedHat, Mandrake, Corel) Linux, FreeBSD, OpenBSD, NetBSD and possibly every Unix that uses Xfree86 and KDE.
- Remote-Serial-Console-HOWTO, *Remote Serial Console HOWTO*

  Updated: Mar 2003. Covers how to set up your hardware to use a serial console.

4.3.8. Digital Cameras

- Kodak-Digitalcam-HOWTO, *Kodak Digital Camera HOWTO*

  Updated: Jan 2001. Getting a Kodak digital camera working under GNU/Linux.
- libdc1394-HOWTO, *Libdc1394 Library Support for IEEE 1394 Cameras HOWTO*

  Updated: Apr 2007. Discusses how to set up the libdc1394 library on Linux for support of IEEE 1394 (FireWire) cameras.

4.3.9. Graphic Tablets

- Wacom-Tablet-HOWTO, *Wacom Tablet HOWTO*

  Updated: Aug 2001. Installation of (not only) Wacom graphic tablets under linux and/or xfree86.
- Wacom-USB-mini-HOWTO, *Wacom Graphire USB Mini-HOWTO*

  Updated: Jun 2000. How to setup a Wacom Graphire USB tablet for use with Linux.

4.3.10. Diskettes

- Automount, *Automount mini-HOWTO*

Updated: Dec 2002. Describes the autofs automounter, how to configure it; points out some problems to avoid.

4.3.11. Hard Disks

- Antares-RAID-sparcLinux-HOWTO, *Antares-RAID-sparcLinux-HOWTO*

  Updated: May 2002. Describes how to install, configure, and maintain a hardware RAID built around the 5070 SBUS host based RAID controller by Antares Microsystems.
- ATA-RAID-HOWTO, *Linux ATA RAID HOWTO*

  Updated: May 2002. Explains how to install Linux on an Intel Pentium compatible computer with an ATA RAID Controller (onboard chip or seperate card), single or multiple processors and at least two hard disks.
- Clone-HOWTO, *HOWTO Clone Disk Images on Linux Booted from a Network*

  Updated: Sep 2002. Describes a setup that allows a machine to boot Linux from BOOTP/TFTP, using the Grub boot loader, and save and restore disk and partition images to and from a TFTP server.
- Disk-Encryption-HOWTO, *Disk Encryption HOWTO*

  Updated: Nov 2004. A method is described for encrypting a hard disk, either in whole or in part, with the encryption key stored on an external medium for increased security.
- Disk-on-Chip-HOWTO, *Disk on Chip HOWTO*

  Updated: Sep 2006. Discusses how to make the Flash Drives Linux bootable. Describes how to boot from such a drive, instead of from the normal hard drive.
- DPT-Hardware-RAID-HOWTO, *Linux DPT Hardware RAID HOWTO*

  Updated: Aug 2004. How to set up hardware RAID under Linux.
- Encrypted-Root-Filesystem-HOWTO, *Encrypted Root Filesystem HOWTO*

  Updated: Mar 2005. Explains how to make your personal data secure by encrypting your Linux root filesystem using strong cryptography.
- Hard-Disk-Upgrade, *Hard Disk Upgrade Mini HOWTO*

  Updated: Apr 2000. How to copy a Linux system from one hard disk to another.
- Large-Disk-HOWTO, *Large Disk HOWTO*

  Updated: Nov 2004. All about disk geometry and the 1024 cylinder limit for disks.
- Linux-Promise-RAID1-HOWTO, *Linux Migration to Promise RAID Card HOWTO*

  Updated: Mar 2003. Outlines the steps of how to migrate an existing (Red Hat) Linux install onto a Promise TX2 Card for the purposes of RAID-1 Mirroring.
- Multi-Disk-HOWTO, *HOWTO: Multi Disk System Tuning*

  Updated: May 2002. How best to use multiple disks and partitions for a Linux system.

4.3.12. Jaz and ZIP Drives

- Jaz-Drive-HOWTO, *Jaz-drive HOWTO*

  Updated: Jan 2000. Covers the configuration and use of the 1Gb and 2Gb Iomega Jaz drives under Linux.
- ZIP-Drive, *Zip Drive Mini-HOWTO*

  Updated: Mar 2002. Provides a quick reference quide on setting up and using the Iomega ZIP drive with Linux.
- ZIP-Install, *Installing Linux on ZIP disk using ppa ZIP Drive Mini-Howto*

  Updated: Jan 1998. This document is only useful for those with the printer port version of a ZIP drive who wish to have either a portable or backup Linux system on a ZIP disk.

4.3.13. Mice

- 3-Button-Mouse, *The 3 Button Serial Mouse mini-HOWTO*

  Updated: May 1998. How to get a 3 button serial mouse working properly under Linux.

4.3.14. Modems

- ACP-Modem, *Linux ACP Modem (Mwave) mini-HOWTO*

  Updated: Jul 2002. Describes how to build, setup, and use the ACP (Mwave) Modem feature of the IBM Thinkpad[tm] 600E, 600, and 770x.
- Cable-Modem, *Cable Modem HOWTO*

  Updated: Jul 2004. Written to assist the Linux user in configuring a cable modem for internet access using a cable network.
- Conexant+Rockwell-modem-HOWTO, *Conexant/Rockwell modem HOWTO*

  Updated: Mar 2002. A guide to using Conexant and Rockwell chipset based Software modems under Linux.
- Linmodem-HOWTO, *Linmodem-Mini-HOWTO*

  Updated: Feb 2001. Describes Linmodem (winmodem hardware) support under Linux.
- Linux-Modem-Sharing *Modem sharing mini-HOWTO*

  Updated: Aug 2001. Describes how to setup a Linux system in order to share a modem attached to this system with other systems over a TCP/IP network.
- Modem-HOWTO, *Modem HOWTO*

  Updated: Jan 2007. Help with selecting, connecting, configuring, trouble-shooting, and understanding modems for a PC.
- Modem-Dialup-NT-HOWTO, *Modem-Dialup-NT HOW-TO*

  Removed: November 2003. This HOWTO has been removed for review.

- Motorola-Surfboard-Modem, *Motorola Surfboard 4100 + 4200 Series USB Cable Modem mini-HOWTO*

  Updated: May 2003. Written to assist the Linux user in setting up the Motorola Surfboard 4000 series of cable modems.
- PCTel-MicroModem-Config, *PCTel HSP MicroModem Configuration mini-HOWTO*

  Updated: Dec 2002. Make your PCTel HSP MicroModem work in Linux.
- Reliance-HOWTO, *Reliance LG LSP 340 Series WLL Modem Setup HOWTO*

  Updated: Jun 2005. This document explains how to set up and configure Reliance or TATA Indicomm WLL phones on Linux, using a serial cable instead of the (default) USB cable. It also has instructions on how to build the cable yourself.
- Winmodems-and-Linux-HOWTO, *Winmodems-and-Linux HOWTO*

  Updated: Apr 2001. Helps users get a Winmodem working under Linux.

4.3.15. Printers / Scanners

- Debian-and-Windows-Shared-Printing, *Debian and Windows Shared Printing mini-HOWTO*

  Updated: Jul 2005. Demonstrates how to use command-line tools to configure your Debian system for printing. It explains how to send documents from Linux to Windows printers and how to share Linux printers with Windows PCs.
- Printing-HOWTO, *The Linux Printing HOWTO*

  Updated: Jun 2003. A collection of information on how to generate, preview, print and fax anything under Linux (and other Unices in general).
- Scanner-HOWTO, *The Scanner HOWTO*

  Updated: May 2004. Documents the steps necessary for access and use of a photographic scanner device on a system running Linux.

4.3.16. Routers

- Linksys-Blue-Box-Router-HOWTO, *Linksys Blue Box Router HOWTO*

  Updated: Aug 2006. Hints and tips for managing Linksys routers from a Linux system, including the firmware upgrade procedure.

4.3.17. SCSI

- SCSI-2.4-HOWTO, *The Linux 2.4 SCSI subsystem HOWTO*

  Updated: Aug 2004. Describes the SCSI subsystem as the Linux kernel enters the 2.4 production series. An external view of the SCSI subsystem is the main theme. Material is included to help the system administration of the Linux SCSI subsystem.
- SCSI-Generic-HOWTO, *The Linux SCSI Generic (sg) HOWTO*

Updated: May 2002. Describes the SCSI Generic driver (sg) found in the Linux 2.4 production series of kernels. Focuses on the interface and characteristics of the driver that application writers may need to know.

4.3.18. Serial Ports

- Serial-HOWTO, *Serial HOWTO*

  Updated: Feb 2011. Describes serial port features other than those which should be covered by other HOWTOs. Lists information on multiport serial cards and contains detailed technical information about the serial port itself.
- Boca, *Installing Boca Card Mini-HOWTO*

  Updated: Jan 2001. Describes the basics of a Boca 16-port serial card (Boca 2016) with Linux.
- Serial-Laplink-HOWTO, *Serial Laplink HOWTO*

  Updated: Jul 2001. Details how to setup a "laplink" connection between two computers.
- Remote-Serial-Console-HOWTO, *Remote Serial Console HOWTO*

  Updated: Mar 2003. Covers how to set up your hardware to use a serial console.

4.3.19. Sound Cards

Also see **Applications: Section 4.5.5 Multimedia : Section 4.5.5.1 Sound**.

- MIDI-HOWTO, *The Linux MIDI-HOWTO*

  Updated: May 2002. Describes the hardware, software and procedures needed to play and sequence using MIDI under Linux.
- Soundblaster-AWE, *Sound Blaster AWE 32/64 HOWTO*

  Updated: Jan 1998. How to install and configure a Sound Blaster 32 (SB AWE 32, SB AWE 64) card from Creative Labs in a Linux System using the AWE Sound Driver Extension written by Takashi Iwai. It also covers some special tools and players for the SB AWE series.

4.3.20. Tape Drives

- Ftape-HOWTO, *Ftape HOWTO*

  Updated: Aug 1998. Discusses essential do's and dont's for the ftape floppy tape driver under Linux. Focuses on the newest version (ftape-4.02 at the time of this writing).

4.3.21. Touchscreens

- XFree86-Touch-Screen-HOWTO, *Linux Touch Screen HOWTO*

  Updated: Nov 2006. How to set up a touch screen input device under XFree86.

4.3.22. UPS

- UPS-HOWTO, *UPS HOWTO*

  Updated: May 2007. Teaches you things you need to know to select a UPS (Uninterruptible Power Supply) intelligently and make it work with your open-source operating system.

4.3.23. Wireless

- Wireless-HOWTO, *Wireless HOWTO for Linux Systems*

  Updated: Jul 2002. Document explains how to setup Wireless in Linux, compatibility problems, something about geographic requirements and more.
- Infrared-HOWTO, *Linux Infrared HOWTO*

  Updated: Oct 2011. Introduction to Linux and infrared devices and how to use the software provided by the Linux/IrDA project.
- Wireless-Link-sys-WPC11, *Link-sys WPC11 Mini-HOWTO*

  Updated: Jun 2004. How to set up a Wireless Link-Sys WPC11 card using a Link-SYS Wireless Access Point/DSL/Switch on a Debian system.
- Wireless-Sync-HOWTO, *Wireless Sync HOWTO*

  Updated: Mar 2002. Explains how to perform a wireless, network sync between a Handspring Visor and jpilot or jpilot-sync.

4.3.24. Miscellaneous

- ACPI-HOWTO, *ACPI: Advanced Configuration and Power Interface*

  Updated: Jul 2004. Outlines how to patch a kernel for ACPI support; which allows control of power management from within the operating system.
- Athlon-Powersaving-HOWTO, *Athlon Powersaving HOWTO*

  Updated: Jun 2007. How to enable the power-saving functionality of the Athlon/Duron/AthlonXP processor on some motherboards/chipsets.
- Clock, *The Clock Mini-HOWTO*

  Updated: Nov 2000. How to set and keep your computer's clock on time.
- Flash-Memory-HOWTO, *USB Flash Memory HOWTO*

  Updated: Mar 2004. Describes procedures for installing USB Flash Memory devices and the way of formatting them for various file systems such as vfat (the way they usually come) and ext2 (the way they fit in better with Linux).
- IO-Perf-HOWTO, *I/O Performance HOWTO*

  Updated: May 2002. Covers information on available patches for the 2.4 kernel that will improve the I/O performance of your Linux operating system.
- MP3-Box-HOWTO, *MP3 Player Box HOWTO*

Updated: Apr 2001. Describes how to build, configure, install, and use a custom MP3 player box. It lists the necessary hardware and answers a number of frequently asked questions.

- PCI-HOWTO, *Linux PCI-HOWTO*

  Updated: Jun 2001. Information on what works with Linux and PCI-boards and what does not.
- PCMCIA-HOWTO, *Linux PCMCIA HOWTO*

  Updated: Dec 2003. How to install and use PCMCIA Card Services for Linux.
- Plug-and-Play-HOWTO, *The Linux Plug-and-Play HOWTO*

  Updated: Aug 2007. How to get your Linux system to support Plug-and-Play.
- Smart-Card-HOWTO, *Smart Card HOWTO*

  Updated: Sep 2001. Information on smart card technology and its applications in Linux environment.
- VCR-HOWTO, *VCR-HOWTO - Using your GNU/Linux computer as a VCR*

  Updated: Jul 2001. A guide to setting up your GNU/Linux workstation as a digital VCR using the video4linux driver and a supported tuner card.
- Webcam-HOWTO, *The Webcam HOWTO*

  Updated: Feb 2005. Assists the reader in the steps necessary to configure and use a webcam within the Linux operating system.
- Xterminals, *Connecting X Terminals to Linux Mini-HOWTO*

  Updated: May 2003. How to connect X Terminals with a Linux host using nfs, xfs, xdm and xdmcp.

4.4. Networking

Topics covered in this section include:

Section 4.4.1 General
Section 4.4.2 Protocols
Section 4.4.3 Dial-up
Section 4.4.4 DNS
Section 4.4.5 Virtual Private Networks
Section 4.4.6 Bridging
Section 4.4.7 Routing
Section 4.4.8 Security
Section 4.4.9 Telephony / Satellite
Section 4.4.10 Miscellaneous

4.4.1. General

- Networking-Overview-HOWTO, *The Linux Networking Overview HOWTO*

  Updated: Jul 2000. Overview of the networking capabilities of the Linux Operating System; provides pointers for further information and implementation details.

- NET3-4-HOWTO, *Linux Networking HOWTO*

  Updated: Aug 1999. Aims to describe how to install and configure the Linux networking software and associated tools.
- ADSL-Bandwidth-Management-HOWTO, *ADSL Bandwidth Management HOWTO*

  Updated: Apr 2003. Describes how to configure a linux router to more effectively manage outbound traffic on an ADSL modem.
- Bandwidth-Limiting-HOWTO, *Bandwidth Limiting HOWTO*

  Updated: Nov 2001. Describes how to set up your Linux server to limit download bandwidth or incoming traffic, and how to use your internet link more efficiently.
- Cable-Modem, *Cable Modem HOWTO*

  Updated: Jul 2004. Written to assist the Linux user in configuring a cable modem for internet access using a cable network.
- DHCP, *DHCP mini-HOWTO*

  Updated: Oct 2000. Answers basic questions on how to set up your Linux box to serve as a DHCP server or a DHCP client.
- Diskless-root-NFS-HOWTO, *Root over nfs clients & server HOWTO*

  Updated: Mar 1999. How to setup a server and configure clients for diskless operation from a network.
- Diskless-root-NFS-other-HOWTO, *Root over NFS - Another Approach*

  Updated: Sep 2001. Another approach to Diskless-root-NFS-HOWTO.
- Diskless-HOWTO, *Diskless Nodes HOWTO for Linux*

  Updated: May 2002. How to set up a diskless Linux box.
- Divert-Sockets-mini-HOWTO, *Divert Sockets mini-HOWTO*

  Updated: Feb 2000. Describes how to get, compile and use FreeBSD divert sockets under Linux 2.2.12.
- Domain, *Setting Up Your New Domain Mini-HOWTO*

  Updated: Oct 2000. Outlines the things you will probably have to do when you want to set up a network of computers under your own domain.
- DSL-HOWTO, *DSL HOWTO for Linux*

  Updated: Jul 2002. Examines the DSL family of high speed Internet services now being deployed in various markets worldwide. Information is included on the technology behind DSL as well as subscribing, installing, configuring, and troubleshooting, with an emphasis on how this impacts Linux users.
- IP-Alias, *Setting Up IP Aliasing On A Linux Machine Mini-HOWTO*

  Updated: Jan 2001. How to set up and run IP aliasing on a Linux box.
- Leased-Line, *Leased line mini-HOWTO*

  Updated: Sep 2005. Configuring your modem and pppd to use a 2 wire twisted pair leased line.
- Modem-HOWTO, *Modem HOWTO*

Updated: Jan 2007. Help with selecting, connecting, configuring, trouble-shooting, and understanding modems for a PC.

- Modem-Dialup-NT-HOWTO, *Modem-Dialup-NT HOW-TO*

Removed: November 2003. This HOWTO has been removed for review.

- Motorola-Surfboard-Modem, *Motorola Surfboard 4100 + 4200 Series USB Cable Modem mini-HOWTO*

Updated: May 2003. Written to assist the Linux user in setting up the Motorola Surfboard 4000 series of cable modems.

- Multicast-HOWTO, *Multicast over TCP/IP HOWTO*

Updated: Mar 1998. Tries to cover most aspects related to multicast over TCP/IP networks.

- Netscape+Proxy, *HOWTO for inHouse IntraNet*

Updated: Aug 1997. Describes the procedure to set up a NETWORK (INTRANET) at your home. Then we shall setup the network such that NETSCAPE Clients can be used on ANY machine to access the internet. . .

- Network-boot-HOWTO, *Network boot and exotic root HOWTO*

Updated: Apr 2002. Explains how to quickly setup a linux server to provide what diskless linux clients require to get up and running, using an IP network.

- Network-Install-HOWTO, *Network Install HOWTO*

Updated: Sep 2002. Describes how to install Linux over a Local Area Network (LAN).

- NIS-HOWTO, *The Linux NIS(YP)/NYS/NIS+ HOWTO*

Updated: Jul 2003. How to configure Linux as NIS(YP) or NIS+ client and how to install as a NIS server.

- NFS-HOWTO, *NFS HOWTO*

Updated: Aug 2002. How to set up NFS clients and servers.

- Proxy-ARP-Subnet, *ProxyARP Subnetting HOWTO*

Updated: Aug 2000. Discusses using Proxy Address Resolution Protocol (ARP) with subnetting in order to make a small network of machines visible on another Internet Protocol (IP) subnet.

- Reliance-HOWTO, *Reliance LG LSP 340 Series WLL Modem Setup HOWTO*

Updated: Jun 2005. This document explains how to set up and configure Reliance or TATA Indicomm WLL phones on Linux, using a serial cable instead of the (default) USB cable. It also has instructions on how to build the cable yourself.

- Remote-Boot, *Linux Remote-Boot mini-HOWTO: Configuring Remote-Boot Workstations with Linux, DOS, Windows 95/98 and Windows NT*

Updated: Feb 1999. How to set up a very robust and secure server-based configuration for a cluster of PCs, allowing each client to choose at boot-time which operating system to run.

- Remote-X-Apps, *Remote X Apps mini-HOWTO*

Updated: Dec 2001. How to run remote X applications.

- Token-Ring, *Token-Ring mini-HOWTO*

Updated: Jan 2002. Designed to help you get up and running using a Token Ring adaptor to access the network.

- Traffic-Control-HOWTO, *Traffic Control HOWTO*

  Updated: Oct 2006. Traffic control encompasses the sets of mechanisms and operations by which packets are queued for transmission/reception on a network interface. This HOWTO provides an introduction and overview of the capabilities and implementation of traffic control under Linux.
- Traffic-Control-tcng-HTB-HOWTO, *Traffic Control using tcng and HTB HOWTO*

  Updated: Oct 2006. A brief tutorial on using tcng (Traffic Control Next Generation) with HTB (Hierarchical Token Bucket) to perform traffic shaping on a Linux machine.
- Usenet-News-HOWTO, *Usenet News HOWTO*

  Updated: Aug 2002. A complete HOWTO on Usenet news.
- Windows-LAN-Server-HOWTO, *Windows LAN server HOW-TO*

  Updated: Oct 2004. Intended to assist those who wish to consider Linux as a server within an office environment which has PC's primarily running Microsoft Windows 9x.

4.4.2. Protocols

- ATM-Linux-HOWTO, *ATM on Linux HOWTO*

  Updated: Oct 2001. Describes how to install, setup, and configure the necessary drivers and tools to support ATM networking under Linux.
- Compressed-TCP, *Compressed TCP/IP-Sessions using SSH-like tools*

  Updated: Apr 2000. Discusses how to compress data streams.
- Ethernet-HOWTO, *Linux Ethernet HOWTO*

  Updated: Aug 2003. Information about which ethernet devices can be used for Linux, and how to set them up (focused on the hardware and low level driver aspect of the ethernet cards; see Network HOWTO for software configuration information).
- Ethernet-Bridge-netfilter-HOWTO, *Ethernet Bridge + netfilter Howto*

  Updated: Jul 2005. Information on setting up an ethernet bridge with a surveying and/or regulating instance into an existing network topology.
- Linux+IPv6-HOWTO, *Linux IPv6 HOWTO*

  Updated: Dec 2009. The goal of this HOWTO is to answer both basic and advanced questions about IPv6 on the Linux operating system. This HOWTO will provide the reader with enough information to install, configure, and use IPv6 applications on Linux machines.
- IPX-HOWTO, *Linux IPX HOWTO*

  Updated: May 1998. How to obtain, install and configure various tools available for the Linux operating system that use the Linux kernel IPX protocol support.
- LDAP-HOWTO, *LDAP Linux HOWTO*

  Updated: Mar 2007. Information about installing, configuring, running and maintaining a LDAP (Lightweight Directory Access Protocol) Server on a Linux machine.

- Mobile-IPv6-HOWTO, *Linux Mobile IPv6 HOWTO*

  Updated: Apr 2004. Describes the software and procedures to set up and use mobile IPv6 for Linux.
- OLSR-IPv6-HOWTO, *Linux Optimized Link State Routing Protocol (OLSR) IPv6 HOWTO*

  Updated: Apr 2004. Describes the software and procedures to set up and use Optimized Link State Routing Protocol (OLSR) with IPv6 for Linux. OLSR is used as a routing protocol for Mobile Ad-Hoc Networks.
- PLIP, *LINUX PLIP mini-HOWTO*

  Updated: Mar 1998. Will hopefully let you build and use a Parallel Line Interface Protocol.
- PLIP-Install-HOWTO, *PLIP Install HOWTO*

  Updated: Jul 2002. How to install a Gnu/Linux distribution on a computer without Ethernet card, nor cdrom, but just a local floppy drive and a remote nfs server attached by a Null-Modem parallel cable.
- PPP-HOWTO, *Linux PPP HOWTO*

  Updated: Jul 2000. How to connect your Linux PC to a PPP server, how to use PPP to link two LANs together; provides one method of setting up your Linux computer as a PPP server. The document also provides help in debugging non-functional PPP connections.
- ppp-ssh, *VPN PPP-SSH Mini-HOWTO*

  Updated: Jan 2002. A PPP-SSH VPN is probably the easiest type of VPN to set up. It uses nothing more than the very common PPP and SSH utilities to form an encrypted network tunnel between two hosts.
- SLIP-PPP-Emulator, *SLIP/PPP Emulator mini-HOWTO*

  Updated: Feb 2001. Describes how to get your Linux box to connect to a generic site via a SLIP/PPP emulator, such as SLiRP or TIA.
- SMB-HOWTO, *SMB HOWTO*

  Updated: Apr 2000. How to use the Server Message Block (SMB) protocol, also called the Session Message Block, NetBIOS or LanManager protocol, with Linux using Samba.
- TCP-Keepalive-HOWTO, *TCP Keepalive HOWTO*

  Updated: May 2007. Describes the TCP keepalive implementation in the linux kernel, introduces the overall concept and points to both system configuration and software development.
- Wireless-HOWTO, *Wireless HOWTO for Linux Systems*

  Updated: Jul 2002. Document explains how to setup Wireless in Linux, compatibility problems, something about geographic requirements and more.
- Wireless-Link-sys-WPC11, *Link-sys WPC11 Mini-HOWTO*

  Updated: Jun 2004. How to set up a Wireless Link-Sys WPC11 card using a Link-SYS Wireless Access Point/DSL/Switch on a Debian system.
- Wireless-Sync-HOWTO, *Wireless Sync HOWTO*

  Updated: Mar 2002. Explains how to perform a wireless, network sync between a Handspring Visor and jpilot or jpilot-sync.

4.4.3. Dial-up

- Call-back *call-back mini HOWTO*

  Updated: Oct 2001. How to set up call-back by using the Linux system and modem.
- Diald-HOWTO, *Diald HOWTO*

  Updated: Apr 2000. Shows some typical scenarios for easy start using Diald. *Replaces the Diald mini-HOWTO*.
- ISP-Hookup-HOWTO, *ISP-Hookup HOWTO*

  Updated: Mar 1998. How to use Linux to connect to an Internet Service Provider via a dial-up modem TCP/IP connection (basic dial-up procedure and IP establishment, email and news handling is covered).

4.4.4. DNS

- Chroot-BIND-HOWTO, *Chroot-BIND HOWTO*

  Updated: Dec 2001. Describes installing the BIND 9 nameserver to run in a chroot jail and as a non-root user, to provide added security and minimise the potential effects of a security compromise.
- Chroot-BIND8-HOWTO, *Chroot-BIND8 HOWTO*

  Updated: Jul 2001. Describes installing the BIND 8 nameserver to run in a chroot jail and as a non-root user, to provide added security and minimise the potential effects of a security compromise.
- DNS-HOWTO, *DNS HOWTO*

  Updated: Dec 2001. How to become a totally "small time" DNS admin.

4.4.5. Virtual Private Networks

- VPN-HOWTO, *VPN HOWTO*

  Updated: May 2002. How to set up a Virtual Private Network with Linux.
- VPN-Masquerade-HOWTO, *Linux VPN Masquerade HOWTO*

  Updated: Oct 2000. How to configure a Linux firewall to masquerade IPsec- and PPTP-based Virtual Private Network traffic, allowing you to establish a VPN connection without losing the security and flexibility of your Linux firewall's internet connection and allowing you to make available a VPN server that does not have a registered internet IP address.
- Cipe+Masq, *The Linux Cipe+Masquerading mini-HOWTO*

  Updated: Apr 1999. How to setup a VPN using Cipe on a linux masquerading firewall.
- Firewall-Piercing, *Firewall Piercing mini-HOWTO*

  Updated: Nov 2001. Directions for using ppp over telnet to do network activities transparently through an Internet firewall.
- IPCHAINS-HOWTO, *Linux IPCHAINS HOWTO*

Updated: Jul 2000. How to obtain, install and configure the enhanced IP firewalling chains software for Linux, and some ideas on how you might use them.

- MindTerm-SSH-HOWTO, *Encrypted Tunnels using SSH and MindTerm HOWTO*

Updated: Jun 2001. How to use SSH and the Java-based program MindTerm to create quick, secure, and reliable VPN-like tunnels over insecure networks.

- ppp-ssh, *VPN PPP-SSH Mini-HOWTO*

Updated: Jan 2002. A PPP-SSH VPN is probably the easiest type of VPN to set up. It uses nothing more than the very common PPP and SSH utilities to form an encrypted network tunnel between two hosts.

4.4.6. Bridging

- BRIDGE-STP-HOWTO, *Linux BRIDGE-STP-HOWTO*

Updated: Jan 2001. Describes how to setup a bridge with the recent kernel patches and brctl utility by Lennert Buytenhek. With developer kernel 2.3.47 the new bridging code is part of the mainstream. On 20.06.2000 there are patches for stable kernels 2.2.14 and 2.2.15. What happens if a penguin crosses a bridge?

- Bridge, *Bridging mini-HOWTO*

Updated: May 2002. Describes how to setup an ethernet bridge.

- Bridge+Firewall, *Linux Bridge+Firewall Mini-HOWTO*

Updated: Dec 1997. A bridge is an intelligent connection wire between two network cards. A firewall is an intelligent insulator.

- Remote-Bridging, *Remote Bridging with IP Tunnels mini-HOWTO*

Updated: May 2002. Describes how to unite two separate ethernet LANs with an IP tunnel between them.

4.4.7. Routing

- Adv-Routing-HOWTO, *Linux Advanced Routing & Traffic Control HOWTO*

Updated: Jul 2002. A very hands-on approach to iproute2, traffic shaping and a bit of netfilter.

- Querying-libiptc-HOWTO, *Querying libiptc HOWTO*

Updated: Apr 2002. Explains how to use the libiptc library included in the iptables package and how to use programs to query the internal structures.

- PortSlave, *PortSlave How-To using the Linux Router*

Updated: Oct 2000. A beginning document for using Portslave with the Linux router.

- IP-Masquerade-HOWTO, *Linux IP Masquerade HOWTO*

Updated: Nov 2005. How to enable the Linux IP Masquerade feature on a given Linux host.

- Linksys-Blue-Box-Router-HOWTO, *Linksys Blue Box Router HOWTO*

Updated: Aug 2006. Hints and tips for managing Linksys routers from a Linux system, including the firmware upgrade procedure.

- Masquerading-Simple-HOWTO, *Masquerading Made Simple HOWTO*

  Updated: Jul 2004. Describes how to enable the Linux IP Masquerade feature on a given Linux host. Should be used as a complement to the the IP-Masquerade-HOWTO.

4.4.8. Security

- 8021X-HOWTO, *802.1X Port-Based Authentication HOWTO*

  Updated: Oct 2004. Describes the software and procedures to set up and use IEEE 802.1X Port-Based Network Access Control using Xsupplicant as Supplicant with FreeRADIUS as a back-end Authentication Server.
- Authentication-Gateway-HOWTO, *Authentication Gateway HOWTO*

  Updated: Nov 2002. Document explains how to setup an authentication gateway.
- Bridge+Firewall, *Linux Bridge+Firewall Mini-HOWTO*

  Updated: Dec 1997. A bridge is an intelligent connection wire between two network cards. A firewall is an intelligent insulator.
- Domain, *Setting Up Your New Domain Mini HOWTO*

  Updated: Oct 2000. Outlines the things you will probably have to do when you want to setup a network of computers under your own domain. Covers configuration of network parameters, network services, and security settings.
- Firewall-HOWTO, *Firewall and Proxy Server HOWTO*

  Updated: Feb 2000. Designed to describe the basics of firewall systems and give you some detail on setting up both a filtering and proxy firewall on a Linux based system.
- Firewall-Piercing, *Firewall Piercing mini-HOWTO*

  Updated: Nov 2001. Directions for using ppp over telnet to do network activities transparently through an Internet firewall.
- IPCHAINS-HOWTO, *Linux IPCHAINS HOWTO*

  Updated: Jul 2000. How to obtain, install and configure the enhanced IP firewalling chains software for Linux, and some ideas on how you might use them.
- Samba-Authenticated-Gateway-HOWTO, *Samba Authenticated Gateway HOWTO*

  Updated: Jan 2005. How to build a Firewall/Gateway with rules set on user basis having the users authenticated by a Samba Primary Domain Controller.
- Sentry-Firewall-CD-HOWTO, *Sentry Firewall CD HOWTO*

  Updated: Aug 2003. An introduction on how the Sentry Firewall CDROM works and how to get started using the system.
- SSL-Certificates-HOWTO, *SSL Certificates HOWTO*

  Updated: Oct 2002. How to manage a certificate authority (CA), and issue or sign certificates to be used for secure web, secure e-mail, or signing code and other usages.

- SSL-RedHat-HOWTO, *Building a Secure RedHat Apache Server HOWTO*

  Updated: Feb 2001. Explains how PKI and SSL work together. It is essential to understand how the SSL protocol works to successfully deploy a secure server.

4.4.9. Telephony / Satellite

- Sat-HOWTO, *Sat (Satellite Technology) HOWTO*

  Updated: Jul 2002. Investigates "State of Art" Sat connections in a Linux environment; how to get them faster and how to share them with many clients.
- VoIP-HOWTO, *VoIP Howto*

  Updated: Aug 2002. Voice Over IP is a new communication means that let you telephone with Internet at almost null cost. This document covers how this is done.

4.4.10. Miscellaneous

- Caudium-HOWTO, *Caudium HOWTO*

  Updated: Sep 2002. An overview of the Caudium (web) server. Includes information on setup, development, and optimization.
- Home-Network-mini-HOWTO, *Red Hat Linux 6. X as an Internet Gateway for a Home Network*

  Updated: Jun 2000. Tutorial on configuring Red Hat 6 and related variants to operate as an internet gateway to a small home or office network. Topics covered include masquerading, DNS, DHCP, and basic security.
- Jabber-Server-Farming-HOWTO, *Jabber Server Farming How-To*

  Updated: Jun 2002. Provide Jabber admins a look into the present and future of Jabber Server Farming.
- Pager, *The Linux Alphanumeric Pager Gateway Mini-HOWTO*

  Updated: Jul 2001. Discusses the compilation and installation of e-mail to Pager gateway.
- UUCP-HOWTO, *The Linux UUCP HOWTO*

  Updated: Dec 2001. Describes the setup, care & feeding of UUCP under Linux.
- VideoLAN-HOWTO, *VideoLAN HOWTO*

  Updated: Sep 2003. Describes how to use the complete VideoLAN streaming solution.

4.5. Applications / GUI / Multimedia

Topics covered in this section include:

Section 4.5.1 Installing Applications
Section 4.5.2 User Applications
Section 4.5.3 Server Applications

Section 4.5.4 GUI / Window Managers
Section 4.5.5 Multimedia

4.5.1. Installing Applications

- RPM-HOWTO, *RPM HOWTO - RPM at Idle*

  Updated: Nov 1999. RPM is the RPM Package Manager. It is an open packaging system available for anyone to use. It allows users to take source code for new software and package it into source and binary form such that binaries can be easily installed and tracked and source can be rebuilt easily. It also maintains a database of all packages and their files that can be used for verifying packages and querying for information about files and/or packages.
- RPM-for-Unix-HOWTO, *RPM-for-Unix HOW-TO*

  Removed: November 2003. This HOWTO has been removed for review.
- Software-Building-HOWTO, *Building and Installing Software Packages for Linux*

  Updated: Jul 1999. A comprehensive guide to building and installing "generic" UNIX software distributions under Linux.

4.5.2. User Applications

- 3D-Modelling, *3D Graphics Modelling and Rendering mini-HOWTO*

  Updated: Mar 2001. Details download and installation instructions for a graphics rendering and modelling development environment using RedHat Linux.
- AI-Alife-HOWTO, *Linux AI & Alife HOWTO*

  Updated: Mar 2013. Information about, and links to, various AI related software libraries, applications, etc. that work on the Linux platform.
- Astronomy-HOWTO, *Linux Astronomy HOWTO*

  Updated: Apr 2007. Document shares tips and resources to utilize Linux solutions in the pursuit of Astronomy.
- Bzip2, *Bzip2 mini-HOWTO*

  Updated: Aug 1999. How to use the new bzip2 compression program.
- Commercial-HOWTO, *Linux Commercial HOWTO*

  Updated: Mar 1999. A listing of commercial software and applications which are offered for Linux.
- Emacs-Beginner-HOWTO, *Emacs Beginner's HOWTO*

  Updated: Mar 2001. Introduces Linux users to the Emacs editor.
- Emacspeak-HOWTO, *Installing Emacspeak HOWTO*

  Updated: Jul 2002. Installation instructions for the Emacspeak audio desktop application for Linux.
- GIS-GRASS, *GIS-GRASS mini-HOWTO*

  Updated: Nov 1997. How to acquire, install and configure a powerful scientific public-domain

Geographic Information System (GIS): the Geographic Resources Analysis Support System (GRASS).

- IPMasquerading+Napster, *IPMasquerading+Napster mini-HOWTO*

  Updated: Apr 2000. Present a way to allow users behind an IPMasq'd system to use Napster.
- IRC, *Linux IRC mini-HOWTO*

  Updated: Jan 2005. Describes the basics of IRC and respective applications for Linux.
- Linux-Gamers-HOWTO, *The Linux Gamers' HOWTO*

  Updated: Nov 2004. A stepping stone to get the most common problems resolved and to give people the knowledge to begin thinking intelligently about what is going on with their games.
- LinuxGL-QuakeWorld-mini-HOWTO, *LinuxGL (GLX) QuakeWorld Client compile mini-HOWTO*

  Updated: Jan 2001. How to get the OpenGL/GLX Linux QuakeWorld client compiled and working on systems with standard OpenGL hardware acceleration support.
- Mail-User-HOWTO, *The Linux Mail User HOWTO*

  Updated: Feb 2003. An introduction to the world of electronic mail (email) under Linux. Focuses on user-level issues and typical configurations for Linux home and small-business machines connected to the net via an ISP.
- Mozilla-Optimization, *Mozilla Optimization Mini-HOWTO*

  Updated: Jan 2003. How to make configuration and source level customizations of Mozilla to make it more suitable as a primary browser for Linux and X Windows.
- Mutt-GnuPG-PGP-HOWTO, *Mutt-i, GnuPG and PGP HOWTO*

  Updated: Feb 2000. Briefly explains how to configure Mutt-i, PGP and GnuPG in its different versions (2.6.x, 5.x and GnuPG).
- NetMeeting-HOWTO, *Linux NETMEETING HOWTO*

  Updated: Jan 2002. Describes how to make Microsoft NetMeeting interoperate with Linux.
- Outlook-to-Unix-Mailbox, *MS Outlook to Unix Mailbox Conversion mini HOWTO*

  Updated: Jan 2004. Covers conversion of old email in Microsoft Outlook (not Outlook Express!) to typical Unix file formats.
- Pine-Exchange, *Pine-Exchange mini-HOWTO*

  Updated: Mar 2002. Documents the configuration of the Pine email client to be used with a Microsoft Exchange Server.
- Quake-HOWTO, *Linux Quake HOWTO*

  Updated: Mar 2010. How to install, run and troubleshoot Quake, QuakeWorld and Quake II on an Intel Linux system.
- Sat-HOWTO, *Sat (Satellite Technology) HOWTO*

  Updated: Jul 2002. Investigates "State of Art" Sat connections in a Linux environment; how to get them faster and how to share them with many clients.
- Sound-Playing-HOWTO, *The Linux Sound Playing HOWTO*

  Updated: Aug 1998. Lists applications for Linux that play various sound formats.

- Speech-Recognition-HOWTO, *Speech Recognition HOWTO*

  Updated: Apr 2002. Automatic Speech Recognition (ASR) on Linux is becoming easier. Several packages are available for users as well as developers. This document describes the basics of speech recognition and describes some of the available software.
- StarOffice, *StarOffice 3.1 Mini-HOWTO*

  Updated: Nov 1999. Information on installing the StarOffice 3.1 Office Suite by StarDivision.
- TeTeX-HOWTO, *The teTeX HOWTO: The Linux-teTeX Local Guide*

  Updated: Nov 1998. Covers the basic installation and usage of the teTeX TeX and LaTeX implementation, plus auxiliary packages like Ghostscript.
- TkRat, *TkRat mini-HOWTO*

  Updated: Sep 1999. Geared toward anyone interested in using their Linux computer to send and receive Internet E-Mail.
- Vim-HOWTO, *Vim Color Editor HOWTO (Vi Improved w/syntax color highlighting)*

  Removed: November 2003. This HOWTO has been removed for review.
- VoIP-HOWTO, *VoIP Howto*

  Updated: Aug 2002. Voice Over IP is a new communication means that let you telephone with Internet at almost null cost. This document covers how this is done.
- Web-Browsing-Behind-ISA-Server-HOWTO, *Web Browsing Behind ISA Server HOWTO*

  Updated: May 2003. If you are using a Linux box connected to a Windows-based ISA server, this article will help you in set things up so you can browse the web from your Linux machine.
- Wireless-Sync-HOWTO, *Wireless Sync HOWTO*

  Updated: Mar 2002. Explains how to perform a wireless, network sync between a Handspring Visor and jpilot or jpilot-sync.
- WordPerfect, *WordPerfect Mini-howto*

  Updated: Aug 1997. Discusses running WordPerfect on Linux, including a brief discussion on the WordPerfect 7.0 beta.
- Xterm-Title, *How to change the title of an xterm*

  Updated: Oct 1999. How to use escape sequences to dynamically change window and icon titles of an xterm.

4.5.3. Server Applications

4.5.3.1. DBMS / Databases

- DB2-HOWTO, *IBM DB2 Express-C for Linux HOWTO*

  Updated: Aug 2007. Intended for anyone interested in installing and using IBM DB2® Express-C 9 database on Linux®.
- IngresII-HOWTO, *Ingres II HOWTO*

Updated: Sep 2001. Helps install the Ingres II Relational Database Management System on Linux.

- MMBase-Inst-HOWTO, *MMBase Installation HOWTO*

  Updated: Jun 2006. Describes the installation of the MMBase content management system on a Red Hat Linux distribution, using the Tomcat application server, and integrating it with MySQL and Apache.
- Oracle-7-HOWTO, *Oracle 7 Database HOWTO*

  Updated: Aug 1998. A guide to installing and configuring the Oracle 7 Database Server on a Linux system.
- Oracle8-on-RH7X-HOWTO, *Oracle 8i on Linux RH7.X Installation HOWTO*

  Updated: Jul 2002. Following this HOWTO you should be able to get "Oracle 8i, version 8.1.7, Enterprise Edition for Linux" installed on a RedHat 7.X distribution.
- Oracle-9i-Fedora-3-Install-HOWTO, *Oracle 9i under Fedora Core 3 - Installation HOWTO*

  Updated: Jun 2005. Describes how to install Oracle 9i on Fedora Core 3 or greater.
- Oracle-9i-RH8-and-RH9-HOWTO, *Oracle 9i under RedHat Linux 8.x and 9.x - Simple Installation HOWTO*

  Updated: Jun 2003. Describes an example of an Oracle 9i Standard Edition database installation under RedHat Linux 8.x and 9.x.
- PHP-Nuke-HOWTO, *PHP-Nuke: Management and Programming*

  Updated: May 2003. A definitive document on PHP-Nuke (Content Managment System).
- PostgreSQL-HOWTO, *Database-SQL-RDBMS HOWTO for Linux*

  Removed: Jan 2002. This HOWTO has been removed for review. Please visit the official PostgreSQL site for information on this topic.
- Sybase-ASA-HOWTO, *Sybase Adaptive Server Anywhere for Linux HOWTO*

  Updated: Apr 2001. Guides you through the installation of SQL Anywhere Studio 7.0.2 for Linux and the basic operation and administration of Adaptive Server Anywhere databases.
- Sybase-ASE-HOWTO, *Sybase Adaptive Server Enterprise / SQL Server HOWTO*

  Updated: Sep 2003. Describes installation and configuration of Sybase Adaptive Server Enterprise (formerly known as SQL Server) relational database server on the Linux platform, together with basic usage.
- Sybase-PHP-Apache, *Sybase-PHP-Apache mini-HOWTO*

  Updated: Jul 2001. Explains how to set up a Linux machine to run an Apache web server using PHP to access a Sybase-ASE database.
- WWW-mSQL-HOWTO, *A mSQL and perl Web Server HOWTO*

  Updated: Sep 1997. How to build a SQL client/server database using WWW and HTML for the user interface.

4.5.3.2. Mail

- Cyrus-IMAP, *Cyrus IMAP HOWTO*

  Updated: Oct 2000. A comprehensive guide to installing, configuring, and running Cyrus Imap and Cyrus Sasl.
- Mail-Administrator-HOWTO, *The Linux Electronic Mail Administrator HOWTO*

  Updated: Jan 2000. Describes the setup, care and feeding of Electronic Mail (e-mail) under Linux. Primarily intended for administrators.
- Mail-Queue, *Linux Mail-Queue mini-HOWTO*

  Updated: Dec 2001. Configuration changes necessary to make sendmail deliver local mail *now*; while stashing remote mail in the queue until *"I Say So"*.
- Mail2News, *Mail2News mini-HOWTO*

  Updated: Nov 2000. How to feed a mailing list to a news server.
- Majordomo-MajorCool-HOWTO, *Majordomo and MajorCool HOWTO*

  Updated: Nov 2000. Intended to guide a user through an installation of the Majordomo Mailing List Software and MajorCool (utility for managing Majordomo lists via a CGI script).
- Offline-Mailing, *Linux off-line mailing method (offline mailaddr with 1 account)*

  Updated: Jun 1998. Use your linux mailing system offline, receive mail for multiple users with only one email address, and without being 24-24 online.
- Outlook-to-Unix-Mailbox, *MS Outlook to Unix Mailbox Conversion mini HOWTO*

  Updated: Jan 2004. Covers conversion of old email in Microsoft Outlook (not Outlook Express!) to typical Unix file formats.
- Postfix-Cyrus-Web-cyradm-HOWTO, *Postfix-Cyrus-Web-cyradm-HOWTO*

  Updated: Mar 2004. Guides you through the installation of the Postfix mail transportation agent (MTA), the Cyrus IMAP server.
- Qmail-ClamAV-HOWTO, *Qmail-Scanner and ClamAV HOWTO*

  Updated: Sep 2004. Describes how to integrate ClamAV, an anti-virus attachment scanner and Qmail-Scanner, an anti-virus message content scanner, with an existing installation of a qmail email server.
- Qmail+MH, *mini-HOWTO install qmail with MH*

  Updated: Mar 1998. Installation experiences to offer some help to other users who wish to use this combination for their email.
- Qmail-VMailMgr-Courier-imap-HOWTO, *Qmail VMailMgr and Courier-Imap HOWTO*

  Updated: Mar 2002. Building a mail server that will support virtual domain hosting and provide smtp, pop3 and imap services, using a powerful alternative to sendmail.
- Secure-POP+SSH, *Secure POP via SSH mini-HOWTO*

  Updated: Sep 1998. How to set up secure POP connections using ssh.
- Sendmail+UUCP, *Sendmail+UUCP HOWTO*

Updated: May 1998. How to setup a single machine with no direct access to the internet to route mail for you via sendmail and UUCP to a 'smarter host' (eg. your ISP).

- Sendmail-Address-Rewrite, *sendmail address rewriting mini-HOWTO*

Updated: May 1998. A brief description of how to set up sendmail's configuration file for the home user's dial-up access.

- VMailMgr-HOWTO, *VMailMgr HOWTO*

Updated: Apr 2000. Explains how to setup VMailMgr to support pop3 virtual domain services in conjunction with Qmail.

4.5.3.3. Usenet Network News

- Usenet-News-HOWTO, *Usenet News HOWTO*

Updated: Aug 2002. A complete HOWTO on Usenet news.

- News-Leafsite, *News Leafsite mini-HOWTO*

Updated: Dec 2001. This will help you to configure a small leafsite for Usenet News using the free software package Leafnode.

- Windows-Newsreaders-under-Linux-HOWTO, *Windows Newsreaders under Linux HOWTO*

Updated: Feb 2004. Describes how to set up and use several different Windows Usenet newsreaders under the Linux operating system using the Wine "emulator."

4.5.3.4. HTTP / FTP

- Apache-Overview-HOWTO, *Apache Overview HOWTO*

Updated: Oct 2002. An overview of the Apache webserver and related projects. It provides pointers for further information and implementation details.

- Apache-Compile-HOWTO, *Apache Compile HOWTO (Linux edition)*

Updated: Feb 2003. Describes how to compile the Apache Webserver with important modules like mod_perl, mod_dav, mod_auth_ldap, mod_dynvhost, mod_roaming, mod_jserv, and mod_php.

- Apache-mods, *Apache+DSO+mod_ssl+mod_perl+php+mod_auth_nds+mod_auth_mysql+mod_fastcgi mini-HOWTO*

Updated: Apr 2000. Details the installation of an Apache based webserver suite configured to handle DSO, and various useful modules including mod_perl, mod_ssl and php.

- Apache+SSL+PHP+fp, *Linux Apache SSL PHP/FI frontpage mini-HOWTO*

Updated: Jul 1998. About building a multipurpose webserver that will support dynamic web content via the PHP/FI scripting language, secure transmission of data based on Netscape's SSL, secure execution of CGI's and M$Frontpage Server Extensions.

- Apache-WebDAV-LDAP-HOWTO, *Apache based WebDAV Server with LDAP and SSL HOWTO*

Updated: Oct 2003. A HOWTO on implementing WebDAV services using Apache - with LDAP for authentication and SSL for ensuring security of the DAV stores.

- Caudium-HOWTO, *Caudium HOWTO*

  Updated: Sep 2002. An overview of the Caudium (web) server. Includes information on setup, development, and optimization.
- FTP, *FTP mini-HOWTO*

  Updated: Jan 2000. How to use ftp clients and servers
- ISP-Setup-RedHat-HOWTO, *"Pocket" ISP based on RedHat Linux*

  Updated: Jan 2001. Outlines the setup of a single RedHat box for dial-ins,virtual web hosting, virtual email, POP3 and ftp servers.
- Intranet-Server-HOWTO, *The Linux Intranet Server HOWTO*

  Updated: Dec 2001. How to setup an Intranet using Linux as the server which binds Unix, Netware, NT and Windows together.
- phhttpd-HOWTO, *PHHTTPD*

  Updated: Apr 2001. phhttpd is an HTTP accelerator. It serves fast static HTTP fetches from a local file-system and passes slower dynamic requests back to a waiting server.
- SSL-Certificates-HOWTO, *SSL Certificates HOWTO*

  Updated: Oct 2002. How to manage a certificate authority (CA), and issue or sign certificates to be used for secure web, secure e-mail, or signing code and other usages.
- SSL-RedHat-HOWTO, *Building a Secure RedHat Apache Server HOWTO*

  Updated: Feb 2001. Explains how PKI and SSL work together. It is essential to understand how the SSL protocol works to successfully deploy a secure server.
- Sybase-PHP-Apache, *Sybase-PHP-Apache mini-HOWTO*

  Updated: Jul 2001. Explains how to set up a Linux machine to run an Apache web server using PHP to access a Sybase-ASE database.
- TransparentProxy, *Transparent Proxy with Squid mini-HOWTO*

  Updated: Aug 2002. Provides information on how to setup a transparent caching HTTP proxy server using only Linux and squid.
- Virtual-Web, *Virtual Web mini-HOWTO*

  Updated: Jun 2001. Discuss the essentials of setting up a Virtual Web Site under Linux.

4.5.3.5. Miscellaneous

- Bandwidth-Limiting-HOWTO, *Bandwidth Limiting HOWTO*

  Updated: Nov 2001. Describes how to set up your Linux server to limit download bandwidth or incoming traffic, and how to use your internet link more efficiently.
- CDServer-HOWTO, *CDServer-HOWTO*

  Updated: Jan 2002. Describes the steps and commands you can use to setup your own CD Server using Linux and some built-in Unix commands along with other freely available software packages.
- Fax-Server, *Linux simple fax printer server mini-HOWTO (faxsrv-mini-HOWTO)*

Updated: Nov 1997. Describes in detail one of the simplest ways to setup a fax server on your Linux system.

- Kiosk-HOWTO, *Kiosk HOWTO*

  Updated: Oct 1999. Provides a guide for setting up a WWW-based kiosk using Linux, X11R6, FVWM2, Netscape Navigator 4.X, and a customized trackball.
- LDAP-HOWTO, *LDAP Linux HOWTO*

  Updated: Mar 2007. Information about installing, configuring, running and maintaining a LDAP (Lightweight Directory Access Protocol) Server on a Linux machine.
- Lotus-DominoR5, *Lotus Domino R5 for Linux mini-HOWTO*

  Updated: Jan 2003. Instructions on installing Lotus Domino R5 for Linux on the Intel x86-based distributions of Mandrake Linux 8.1 and SuSE 7.3 Professional.
- NIS-HOWTO, *The Linux NIS(YP)/NYS/NIS+ HOWTO*

  Updated: Jul 2003. How to configure Linux as NIS(YP) or NIS+ client and how to install as a NIS server.
- Smart-Card-HOWTO, *Smart Card HOWTO*

  Updated: Sep 2001. Information on smart card technology and its applications in Linux environment.
- Tango-HOWTO, *Tango 2000 HOWTO*

  Updated: Jul 2000. Describes the installation, configuration, and basic troubleshooting of Pervasive Software's Tango Application Server on Sun Solaris and various flavours of Linux.
- Virtual-Services-HOWTO, *Virtual Services HOWTO*

  Updated: Aug 1998. How to virtualize a service.

4.5.4. GUI / Window Managers

4.5.4.1. X Window System

- BackspaceDelete, *Linux Backspace/Delete mini-HOWTO*

  Updated: Jan 2002. Solutions for having working Backspace and Delete keys on the console and on X.
- Euro-Char-Support, *Euro Character Support mini HOWTO*

  Updated: Apr 2002. Describes how to make the Euro character support in GNU/Linux work.
- i810-HOWTO, *i810 with XFree86 4.x HOWTO*

  Updated: May 2001. Describes getting XFree86 4.x running on Intel's i810 graphics chipset by using special features of the 2.4.0 kernel.
- Intkeyb, *How to setup international keyboard in X Windows*

  Updated: Nov 2002. This xmodmap and kimap solutions will work for you in setting up any international keyboard for (Debian, RedHat, Mandrake, Corel) Linux, FreeBSD, OpenBSD, NetBSD and possibly every Unix that uses Xfree86 and KDE.
- LBX, *The LBX mini-HOWTO*

Updated: Dec 1997. LBX (Low Bandwidth X) is an X server extension which performs compression on the X protocol. It is meant to be used in conjunction with X applications and an X server which are separated by a slow network connection, to improve display and response time.

- Remote-X-Apps, *Remote X Apps mini-HOWTO*

Updated: Dec 2001. How to run remote X applications.

- X-Big-Cursor, *X11-big-cursor mini-HOWTO*

Updated: Aug 1997. How to use enlarged mouse cursors with the X window system.

- XDM-Xterm, *XDM and X Terminal mini-HOWTO*

Updated: May 2002. Describes the basic ideas for using XDM to manage X terminals. It is not meant to be a comprehensive discussion of all the features of XDM, but a gentle introduction to what XDM can to for X terminals.

- XDMCP-HOWTO, *Linux XDMCP HOWTO*

Updated: Jun 2007. How to setup XDMCP ("X Display Manager Control Protocol").

- XFree86-HOWTO, *The Linux XFree86 HOWTO*

Updated: Sep 2001. How to obtain, install, and configure version 4.0 of the XFree86 version of the X Window System (X11R6) for Linux systems.

- XFree86-Second-Mouse, *Second Mouse in X mini-HOWTO*

Updated: Nov 2001. Quick instructions to enable a second mouse in X.

- XFree86-Touch-Screen-HOWTO, *Linux Touch Screen HOWTO*

Updated: Nov 2006. How to set up a touch screen input device under XFree86.

- XFree86-Video-Timings-HOWTO, *XFree86 Video Timings HOWTO*

Updated: Sep 2013. How to compose a mode line for your card/monitor combination under XFree86.

- XFree86-XInside, *Linux XFree-to-Xinside mini-HOWTO*

Updated: Sep 1997. How to convert an XFree86 modeline into an XInside/XiGraphics one.

- XFree-Local-multi-user-HOWTO, *XFree local multi-user HOWTO*

Updated: Aug 2004. Explains the shortest way to get a working multiple local X user-capable PC system.

- Xinerama-HOWTO, *Using Xinerama to MultiHead XFree86 v.4.0+*

Updated: Nov 2002. How to configure XFree86 Version 4.0+ with multiple monitors and the Xinerama extentions.

- XWindow-Overview-HOWTO, *X Window System Architecture Overview HOWTO*

Updated: May 2001. Provides an overview of the X Window System's architecture.

- XWindow-User-HOWTO, *The X Window User HOWTO*

Updated: Jan 2010. Provides basic information (introductory level) on understanding and configuring the X Window System for Linux users.

4.5.4.2. Window Managers

4.5.4.3. Fonts

- Font-HOWTO, *Optimal Use of Fonts on Linux (Font HOWTO)*

  Updated: Apr 2007. Provides a comprehensive source to act as a starting point for any and all font questions about Linux.
- Indic-Fonts-HOWTO, *The Indic Fonts HOWTO*

  Updated: Jan 2002. A detailed guide on how to install and use Indic scripts (devanagri etc.) using UTF-8 encoding under GNU/Linux.
- TT-Debian, *TrueType Fonts in Debian mini-HOWTO*

  Updated: Jan 2000. How to configure a Debian system to use TrueType fonts for display and printing.
- TT-XFree86, *TrueType Fonts with XFree86 4.0.x mini-HOWTO*

  Updated: Jun 2004. Describes how to use TrueType (*.ttf) fonts with XFree86 4.0.x.

4.5.5. Multimedia

4.5.5.1. Audio

- Alsa-sound, *Alsa-sound-mini-HOWTO*

  Updated: Nov 1999. Describes the installation of the ALSA sound drivers for Linux.
- Fedora-Multimedia-Installation-HOWTO, *Fedora Multimedia Installation HOWTO*

  Updated: Mar 2006. How to get various proprietary and restricted multimedia Damned Things (Flash, MP3, Java, mpeg, avi, Real Media, Windows Media) working under Fedora.
- Sound-HOWTO, *The Linux Sound HOWTO*

  Updated: Jul 2001. Describes sound support for Linux (hardware, configuration, etc).
- Soundblaster-AWE, *Sound Blaster AWE 32/64 HOWTO*

  Updated: Jan 1998. How to install and configure a Sound Blaster 32 (SB AWE 32, SB AWE 64) card from Creative Labs in a Linux System using the AWE Sound Driver Extension written by Takashi Iwai. It also covers some special tools and players for the SB AWE series.
- Sound-Playing-HOWTO, *The Linux Sound Playing HOWTO*

  Updated: Aug 1998. Lists applications for Linux that play various sound formats.
- MIDI-HOWTO, *The Linux MIDI-HOWTO*

  Updated: May 2002. Describes the hardware, software and procedures needed to play and sequence using MIDI under Linux.
- MP3-HOWTO, *The Linux MP3 HOWTO*

  Updated: Dec 2001. Describes the hardware, software and procedures needed to encode, play and stream MP3 sound files under Linux.

- MP3-Box-HOWTO, *MP3 Player Box HOWTO*

  Updated: Apr 2001. Describes how to build, configure, install, and use a custom MP3 player box. It lists the necessary hardware and answers a number of frequently asked questions.
- MP3-CD-Burning, *Linux MP3 CD Burning mini-HOWTO*

  Updated: Aug 2004. A complete recipe for creating audio CDs from MP3 files.

4.5.5.2. Video

- BTTV, *The BTTV HOWTO*

  Updated: Jan 2005. Assists the reader in the steps necessary to configure and use a video tuner card based on the popular Bt848 and Bt878 chipsets within the Linux operating system.
- DVD-HOWTO, *Linux DVD HOWTO*

  Updated: Oct 2000. An easy to follow explanation on how to get DVD movie play-back in Linux.
- DVD-Playback-HOWTO, *DVD Playback HOWTO*

  Updated: Feb 2004. This document describes how to view DVD movies on a Linux computer with a DVD drive.
- VideoLAN-HOWTO, *VideoLAN HOWTO*

  Updated: Sep 2003. Describes how to use the complete VideoLAN streaming solution.

4.6. Programming

Topics covered in this section include:

Section 4.6.1 General
Section 4.6.2 Compilers
Section 4.6.3 Languages
Section 4.6.4 Libraries
Section 4.6.5 Interfaces / API / Protocols
Section 4.6.6 Security
Section 4.6.7 Tools
Section 4.6.8 Version Control
Section 4.6.9 DBMS / Databases
Section 4.6.10 Miscellaneous

4.6.1. General

- Software-Building-HOWTO, *Building and Installing Software Packages for Linux*

  Updated: Jul 1999. A comprehensive guide to building and installing "generic" UNIX software distributions under Linux.
- Software-Proj-Mgmt-HOWTO, *Free Software Project Management HOWTO*

Updated: Apr 2002. A guide to the non-technical aspects of free software project the non-technical aspects of free software project management; and was written to be a crash course in the people skills that aren't taught to commercial coders but that can make or break a free software project.

- Software-Release-Practice-HOWTO, *Software Release Practice HOWTO*

  Updated: Jan 2013. Describes good release practices for Linux open-source projects.

4.6.2. Compilers

- GCC-Frontend-HOWTO, *GCC Frontend HOWTO*

  Updated: Aug 2002. Creating a new GCC front end.

4.6.3. Languages

- Programming-Languages, *Programming Languages mini-HOWTO*

  Updated: Jul 2000. A brief comparison of major programming languages for Linux and major libraries for creating graphical user interfaces (GUIs) under Linux.
- Adv-Bash-Scr-HOWTO, *Advanced Bash-Scripting HOWTO*

  A guide to shell scripting, using Bash.

  Replaced by the Advanced Bash-Scripting Guide.
- Assembly-HOWTO, *Linux Assembly HOWTO*

  Updated: Mar 2013. How to program in assembly language using FREE programming tools, focusing on development for or from the Linux Operating System on IA-32 (i386) platform.
- Bash-Prog-Intro-HOWTO, *BASH Programming - Introduction HOWTO*

  Updated: Jul 2000. This article intends to help you to start programming basic-to-intermediate shell scripts.
- C++Programming-HOWTO, *C++ Programming HOWTO*

  Removed: November 2002. This HOWTO has been removed for review.
- Enterprise-Java-for-Linux-HOWTO, *Enterprise Java for Linux HOWTO*

  Updated: Nov 2001. How to set up an Enterprise Java environment on Linux including a JDK, a Web server, supporting Java servlets, accessing a database via JDBC, and supporting Enterprise Java Beans (EJBs).
- Java-CGI-HOWTO, *Java CGI HOWTO*

  Updated: Dec 1998. Explains how to set up your server to allow CGI programs written in Java and how to use Java to write CGI programs.
- Lex-YACC-HOWTO, *Lex and YACC primer/HOWTO*

  Updated: Apr 2002. Helps you get started using Lex and YACC.
- TclTk-HOWTO, *The Linux Tcl and Tk HOWTO*

  Updated: Nov 1998. Describes the Linux approach to Tcl, a scripting language.

- Scripting-GUI-TclTk, *Scripting Graphical Commands with Tcl/Tk Mini-HOWTO*

  Updated: Aug 2003. This article provides an introduction to building graphical user interface frontends for command-line utilities using Tcl and the Tk toolkit.
- VB6-to-Tcl, *VB6 To Tcl mini-HOWTO*

  Updated: Apr 2003. A 15 Minute Tcl Tour For Visual Basic and VBScript Programmers.

4.6.4. Libraries

- Program-Library-HOWTO, *Program Library HOWTO*

  Updated: Apr 2003. This HOWTO for programmers discusses how to create and use program libraries on Linux. This includes static libraries, shared libraries, and dynamically loaded libraries.
- C++-dlopen, *C++ dlopen mini HOWTO*

  Updated: Mar 2006. How to dynamically load C++ functions and classes using the dlopen API.
- Glibc2-HOWTO, *Glibc 2 HOWTO*

  Updated: Jun 1998. Covers installing and using the GNU C Library version 2 (libc6) on Linux systems.
- NCURSES-Programming-HOWTO, *NCURSES Programming HOWTO*

  Updated: Jun 2005. An "All in One" guide for programming with ncurses and its sister libraries.

4.6.5. Interfaces / API / Protocols

- 3D-Modelling, *3D Graphics Modelling and Rendering mini-HOWTO*

  Updated: Mar 2001. Details download and installation instructions for a graphics rendering and modelling development environment using RedHat Linux.
- Implement-Sys-Call-Linux-2.6-i386, *Implementing a System Call on Linux 2.6 for i386*

  Updated: Oct 2006. Information about implementing system calls in the Linux operating system for i386 architecture with 2.6 kernels.
- IO-Port-Programming, *Linux I/O port programming mini-HOWTO*

  Updated: Dec 2000. Describes programming hardware I/O ports and waiting for small periods of time in user-mode Linux programs running on the Intel x86 architecture.
- Kerneld, *The Linux kerneld mini-HOWTO*

  Updated: May 2000. Explains how you can use the kerneld function in the Linux kernels.
- Lego, *Lego Mindstorm with Linux Mini-HOWTO*

  Updated: Oct 2000. Intended to serve as a very brief introduction to the options available for using the Lego Group's Mindstorm Robotics Invention System (RIS) from within Linux. It also can be used as a gathering point for more information.
- Module-HOWTO, *Linux Loadable Kernel Module HOWTO*

Updated: Sep 2006. Explains what Linux loadable kernel modules (LKMs) are, and how to use and create them.

- NCURSES-Programming-HOWTO, *NCURSES Programming HOWTO*

  Updated: Jun 2005. An "All in One" guide for programming with ncurses and its sister libraries.
- NLM-HOWTO, *NetWare Loadable Module Programming HOWTO*

  Updated: Jan 2007. How to develop NetWare Loadable Modules under Linux, using GNU CC and nlmconv(1) from GNU binutils.
- Parallel-Processing-HOWTO, *Linux Parallel Processing HOWTO*

  Updated: Jun 2004. Discusses the four basic approaches to parallel processing that are available to Linux users: SMP Linux systems, clusters of networked Linux systems, parallel execution using multimedia instructions (i.e., MMX), and attached (parallel) processors hosted by a Linux system.
- Querying-libiptc-HOWTO, *Querying libiptc HOWTO*

  Updated: Apr 2002. Explains how to use the libiptc library included in the iptables package and how to use programs to query the internal structures.
- RTLinux-HOWTO, *RTLinux HOWTO*

  Updated: Aug 2002. RTLinux Installation and writing realtime programs in Linux.
- SCSI-2.4-HOWTO, *The Linux 2.4 SCSI subsystem HOWTO*

  Updated: Aug 2004. Describes the SCSI subsystem as the Linux kernel enters the 2.4 production series. An external view of the SCSI subsystem is the main theme. Material is included to help the system administration of the Linux SCSI subsystem.
- SCSI-Generic-HOWTO, *The Linux SCSI Generic (sg) HOWTO*

  Updated: May 2002. Describes the SCSI Generic driver (sg) found in the Linux 2.4 production series of kernels. Focuses on the interface and characteristics of the driver that application writers may need to know.
- Serial-Programming-HOWTO, *Serial Programming HOWTO*

  Updated: Aug 2001. How to program communications with devices over a serial port on a Linux box.
- SMB-HOWTO, *SMB HOWTO*

  Updated: Apr 2000. How to use the Server Message Block (SMB) protocol, also called the Session Message Block, NetBIOS or LanManager protocol, with Linux using Samba.
- XML-RPC-HOWTO, *XML-RPC HOWTO*

  Updated: Apr 2001. Describes how to use XML-RPC to implement clients and servers in a variety of languages. Provides example code; applies to all operating systems with XML-RPC support.

4.6.6. Security

- Secure-Programs-HOWTO, *Secure Programming for Linux and Unix HOWTO*

  Updated: Mar 2003. Provides a set of design and implementation guidelines for writing secure programs for Linux and Unix systems.

4.6.7. Tools

- C-C++Beautifier-HOWTO, *C-C++ Beautifier HOWTO*

  Removed: November 2003. This HOWTO has been removed for review.
- C-editing-with-VIM-HOWTO, *C editing with VIM HOWTO*

  Updated: Jan 2001. An introduction to editing C and other language files whose syntax is similar like C++ and Java in vi/VIM.
- Java-Decompiler-HOWTO, *Java Decompiler HOWTO*

  Removed: November 2003. This HOWTO has been removed for review.
- RPM-HOWTO, *RPM HOWTO - RPM at Idle*

  Updated: Nov 1999. RPM is the RPM Package Manager. It is an open packaging system available for anyone to use. It allows users to take source code for new software and package it into source and binary form such that binaries can be easily installed and tracked and source can be rebuilt easily. It also maintains a database of all packages and their files that can be used for verifying packages and querying for information about files and/or packages.
- RPM-for-Unix-HOWTO, *RPM-for-Unix HOW-TO*

  Removed: November 2003. This HOWTO has been removed for review.
- Valgrind-HOWTO, *Valgrind HOWTO*

  Updated: Sep 2002. A guide to Valgrind, the malloc debugger.
- Vim-HOWTO, *Vim Color Editor HOWTO (Vi Improved w/syntax color highlighting)*

  Removed: November 2003. This HOWTO has been removed for review.

4.6.8. Version Control

- CVS-RCS-HOWTO, *CVS-RCS HOWTO for Linux (Source Code Control System)*

  Removed: November 2003. This HOWTO has been removed for review.
- RCS, *The RCS mini-HOWTO*

  Updated: Aug 1997. Covers basic installation and usage of RCS, the GNU Revision Control System, under Linux.
- Secure-CVS-Pserver, *Secure CVS Pserver Mini-HOWTO*

  Updated: Mar 2003. Will help you set up a more secure CVS Pserver for anonymous CVS access.

4.6.9. DBMS / Databases

- DB2-HOWTO, *IBM DB2 Express-C for Linux HOWTO*

  Updated: Aug 2007. Intended for anyone interested in installing and using IBM DB2® Express-C 9 database on Linux®.
- IngresII-HOWTO, *Ingres II HOWTO*

Updated: Sep 2001. Helps install the Ingres II Relational Database Management System on Linux.

- Oracle-7-HOWTO, *Oracle 7 Database HOWTO*

  Updated: Aug 1998. A guide to installing and configuring the Oracle 7 Database Server on a Linux system.
- Oracle8-on-RH7X-HOWTO, *Oracle 8i on Linux RH7.X Installation HOWTO*

  Updated: Jul 2002. Following this HOWTO you should be able to get "Oracle 8i, version 8.1.7, Enterprise Edition for Linux" installed on a RedHat 7.X distribution.
- PostgreSQL-HOWTO, *Database-SQL-RDBMS HOWTO for Linux*

  Removed: Jan 2002. This HOWTO has been removed for review. Please visit the official PostgreSQL site for information on this topic.
- WWW-mSQL-HOWTO, *A mSQL and perl Web Server HOWTO*

  Updated: Sep 1997. How to build a SQL client/server database using WWW and HTML for the user interface.

4.6.10. Miscellaneous

- Accessibility-Dev-HOWTO, *How to Develop Accessible Linux Applications*

  Updated: May 2002. Provides Linux software developers with guidelines and test cases for developing accessible Linux applications.
- AI-Alife-HOWTO, *Linux AI & Alife HOWTO*

  Updated: Mar 2013. Information about, and links to, various AI related software libraries, applications, etc. that work on the Linux platform.
- Apache-Compile-HOWTO, *Apache Compile HOWTO (Linux edition)*

  Updated: Feb 2003. Describes how to compile the Apache Webserver with important modules like mod_perl, mod_dav, mod_auth_ldap, mod_dynvhost, mod_roaming, mod_jserv, and mod_php.
- Debian-Binary-Package-Building-HOWTO, *Debian Binary Package Building HOWTO*

  Updated: Aug 2005. Shows how to build a minimal Debian .deb package.
- HighQuality-Apps-HOWTO, *Creating Integrated High Quality Linux Applications HOWTO*

  Updated: Aug 2002. Tries to clarify some issues and give tips on how to create Linux applications highly integrated to the Operating System, security and easy of use.
- Multi-Distro-Dev, *Development for Multiple Linux Distributions mini-HOWTO*

  Updated: Aug 2002. Outlines a quick hack to aid in developing and testing user-space programs for multiple Linux distributions.
- Tango-HOWTO, *Tango 2000 HOWTO*

  Updated: Jul 2000. Describes the installation, configuration, and basic troubleshooting of Pervasive Software's Tango Application Server on Sun Solaris and various flavours of Linux.

4.7. Other (human) Languages

Topics covered in this section include:

Section 4.7.1 Language Support
Section 4.7.2 Using Specific Languages

4.7.1. Language Support

- Unicode-HOWTO, *The Unicode HOWTO*

  Updated: Jan 2001. How to change your Linux system so it uses UTF-8 as text encoding.

4.7.2. Using Specific Languages

- Belarusian-HOWTO, *Linux Belarusian mini-HOWTO*

  Updated: Feb 2001. Short guide in setting up Belarusian language support in Linux console, X Window System, web-browsers, text editors, etc. Charsets described are windows-1251, iso-8859-5 and koi8-ru. *Written in English*.
- Belgian-HOWTO, *The Belgian HOWTO*

  Updated: Feb 2003. How to tweak Linux for Belgian users; lists Linux user groups, businesses and other resources in Belgium.
- Bangla-HOWTO, *Bengali in GNU/Linux HOWTO*

  Updated: Oct 2003. A document to setup and develop support for Bengali (Bangla) in GNU/Linux.
- Chinese-HOWTO, *Chinese HOWTO*

  Updated: Jun 1998. Demonstrates how to implement Chinese on Linux system, including those common problems encountered while using Chinese, the ways to obtain, and shows how to install and setup a variety of different Chinese software.
- Danish-HOWTO, *The Linux Danish/International HOWTO*

  Updated: Mar 2000. How to configure Linux and various Linux applications for Danish locale standards such as keyboard, font, paper-size etc.
- Esperanto-HOWTO, *Linux-Esperanto-HOWTO*

  Updated: Aug 1999.
- Finnish-HOWTO, *Finnish HOWTO*

  Updated: Jan 2005. Describes how to localize GNU/Linux for Finnish users (written in Finnish).
- Francophones-HOWTO, *Le Francophones-HOWTO : Linux & la langue française*

  Updated: Dec 2001.
- German-HOWTO, *German HOWTO*

  Updated: Dec 2001. Addresses Linux localization issues specific to German users (written in German).

- Hebrew-HOWTO, *The Hebrew HOWTO*

  Updated: Sep 1995. How to configure your Linux machine to use Hebrew characters on X-Windows and Virtual Consoles.
- Hellenic-HOWTO, *Hellenic HOWTO*

  Updated: Aug 1997. Addresses Linux localization issues specific to Greek users (written in Hellenic).
- Indic-Fonts-HOWTO, *The Indic Fonts HOWTO*

  Updated: Jan 2002. A detailed guide on how to install and use Indic scripts (devanagri etc.) using UTF-8 encoding under GNU/Linux.
- Italian-HOWTO, *Linux Italian HOWTO*

  Updated: Nov 2004. Addresses Linux localization issues specific to Italian users (written in Italian).
- Latvian-HOWTO, *Latvian HOWTO*

  Updated: Jun 2002. Describes GNU/Linux localization issues specific for Latvian users (written in Latvian).
- Portuguese-HOWTO, *Portuguese HOWTO*

  Updated: Dec 1999. Addresses Linux localization issues specific to Portuguese users (written in Portuguese).
- Serbian-HOWTO, *Serbian HOWTO*

  Updated: Nov 1998. Addresses Linux localization issues specific to Serbian users (written in Serbian).
- Slovak-HOWTO, *Slovak HOWTO*

  Updated: Feb 2002. Addresses Linux localization issues specific to Slovakian users (written in Slovak).
- Slovenian-HOWTO, *Slovenian HOWTO*

  Updated: Feb 1999. Addresses Linux localization issues specific to Slovenian users (written in Slovenian).
- Spanish-HOWTO, *Spanish Linux HOWTO*

  Updated: Aug 1996. Contains information on Linux in the Spanish environment, for developing software with Spanish support or how to get in touch with the Linux community in Spain (written in Spanish).
- Tamil-Linux-HOWTO, *Tamil Linux HOWTO*

  Updated: Feb 2003. Helps you to set up a working Tamil Linux environment. It describes setting up fonts, keyboard drivers, editing and printing Tamil/bilingual documents, and working with the X Window system.
- Thai-HOWTO, *The Linux Thai HOWTO*

  Updated: Aug 1998. How to use Thai language with Linux. This will cover setting Thai fonts, Thai keyboard and some Thai applications.
- Turkish-HOWTO, *Turkish HOWTO*

  Updated: Sep 1999. Addresses Linux localization issues specific to Turkish users (written in Turkish).

4.8. Miscellaneous

Topics covered in this section include:

Section 4.8.1 Authoring / Documentation
Section 4.8.2 Linux Advocacy / Getting (and Staying) Involved
Section 4.8.3 Hobbies and Special Interests

4.8.1. Authoring / Documentation

- DocBook-Demystification-HOWTO, *DocBook Demystification HOWTO*

  Updated: Sep 2010. Attempts to clear the fog and mystery surrounding the DocBook markup system and the tools that go with it.
- DocBook-Install, *DocBook Install mini-HOWTO*

  Updated: Feb 2002. A detailed practical guide for novices to quickly getting DocBook installed and processing SGML files into HTML, PostScript and PDF on a GNU/Linux system.
- DocBook-OpenJade-SGML-XML-HOWTO, *DocBook XML/SGML Processing Using OpenJade*

  Updated: Jul 2003. Explains setting up OpenJade to process SGML/XML DocBook documents.
- HOWTO-HOWTO, *HOWTO HOWTO*

  Lists the tools, procedures, and hints to get LDP authors up to speed and writing.

  Replaced by the LDP Author Guide.
- Howtos-with-LinuxDoc, *Howtos-with-LinuxDoc mini-HOWTO*

  Updated: Nov 2007. This is about how to write HOWTOs using the simple LinuxDoc markup. It's primarily for Linux Documentation Project authors (and future fledging authors who want to get started fast). If you want to use the more advanced DocBook markup (including XML) see the LDP Author Guide.
- LDP-Reviewer-HOWTO, *Linux Documentation Project Reviewer HOWTO*

  Updated: May 2004. This document will help you review LDP documentation. It includes procedures, tips and techniques to make the process easier.
- LinuxDoc+Emacs+Ispell-HOWTO, *LinuxDoc+Emacs+Ispell HOWTO*

  Updated: Feb 1998. Aimed at writers and translators of Linux HOWTOs or any other paper for the Linux Documentation Project. Gives hints at using tools including Emacs and Ispell.
- Linuxdoc-Reference, *Linuxdoc Reference - An Introduction to the linuxdoc DTD*

  Updated: Jan 2000. Intended to be a reference for the SGML document type definition linuxdoc.
- Man-Page, *Linux Man Page HOWTO*

  Updated: Sep 2002. Explains what you should bear in mind when you are going to write on-line documentation -- a so called man page -- that you want to make accessible via the man(1) command.
- WikiText-HOWTO, *LDP WikiText Editing HOWTO*

Updated: Jan 2002. Explains how to use the LDP WikiText editing format to create DocBook documents for the LDP.

4.8.2. Linux Advocacy / Getting (and Staying) Involved

- Advocacy, *Linux Advocacy mini-HOWTO*

  Updated: May 2000. Suggestions for how the Linux community can effectively advocate the use of Linux.
- Commercial-Port-Advocacy, *Commercial Port Advocacy mini-HOWTO*

  Updated: Dec 1999. Discusses methods that can be used to approach commercial software companies to convince them to port their programs to Linux.
- *Linux Consultants HOWTO*

  A listing of companies providing commercial Linux related support.

  Replaced by the Linux Consultants Guide.
- Encourage-Women-Linux-HOWTO, *HOWTO Encourage Women in Linux*

  Updated: Oct 2002. Explains some of the difficulties and biases women face in the Linux community and examines various strategies for addressing those difficulties in order to encourage more participation by women.
- Event-HOWTO, *Event HOWTO*

  Updated: Nov 2000. The purpose of this document is to show you how to create good presentations for almost any sort of Linux event.
- Installfest-HOWTO, *Linux Installfest HOWTO*

  Updated: Jan 2012. Provides some guidelines that should help you run a successful installfest.
- META-FAQ, *Linux Meta-FAQ*

  Updated: Oct 1997. Mainly a list of valuable sources of information for Linux. Use these sources if you want to learn more about Linux, or have problems and need help.
- Online-Troubleshooting-HOWTO, *Online Troubleshooting Resources HOWTO*

  Updated: May 2006. Directs Linux users to resources available on the Internet that provide access to a vast amount of Linux-related information useful in troubleshooting problems.
- Reading-List-HOWTO, *The Linux Reading List HOWTO*

  Updated: Feb 2004. Lists the books the author thinks are most valuable to a person trying to learn Unix (especially Linux) top to bottom.
- Update, *The Staying Updated mini-HOWTO*

  Updated: May 2002. How to stay updated and abreast of the development that takes place in the Linux world of development.
- User-Group-HOWTO, *Linux User Group HOWTO*

  Updated: Jul 2013. A guide to founding, maintaining, and growing a Linux User Group.
- VAR-HOWTO, *Linux VAR HOWTO*

Updated: Aug 1999. Contains a listing of service companies which do not manufacture hardware or create packaged software, but add value to existing products.

4.8.3. Hobbies and Special Interests

- Accessibility-HOWTO, *Linux Accessibility HOWTO*

  Updated: Jun 2002. Covers the use of adaptive technologies that are available for Linux.
- Accessibility-Dev-HOWTO, *How to Develop Accessible Linux Applications*

  Updated: May 2002. Provides Linux software developers with guidelines and test cases for developing accessible Linux applications.
- Astronomy-HOWTO, *Linux Astronomy HOWTO*

  Updated: Apr 2007. Document shares tips and resources to utilize Linux solutions in the pursuit of Astronomy.
- Aviation-HOWTO, *GNU/Linux Aviation HOWTO: Flying with GNU/Linux*

  Updated: Sep 2006. Intended to provide pointers to software packages that run under GNU/Linux and are usefull to pilots (private, commercial or military), airlines, airports or any actors in the aeronautical domain.
- AX25-HOWTO, *Linux Amateur Radio AX.25 HOWTO*

  Updated: Sep 2001. How to install and configure support for the AX. 25 packet radio protocol utilized by Amateur Radio Operators worldwide.
- Coffee, *Coffee Making*

  Updated: Aug 2004. Yes, Linux DOES make coffee, and it tastes good.
- Ecology-HOWTO, *Linux Ecology HOWTO*

  Updated: Aug 2009. Discusses ways to make computers less harmful to our environment and to solve some ecological issues. It explains how to use Linux to save power and consumables like paper and ink. Since it does not require big hardware, Linux may be used with old computers to make their life cycle longer. Games may be used in environmental education and software is available to simulate ecological processes.
- FBB, *FBB Packet-radio BBS mini-HOWTO*

  Updated: Jul 2010. Covers the installation and use of the most popular amateur packet-radio BBS software FBB.
- Home-Electrical-Control, *Home Electrical Device Control mini HOWTO*

  Updated: Feb 2003. Use Linux to control your home electrical devices.
- Medicine-HOWTO, *Linux Medicine-HOWTO*

  Updated: Mar 2004. Some pointers to Linux software (mostly GPLed) for the medical sciences.
- Netrom-Node, *Netrom-Node mini-Howto*

  Updated: Oct 1998. How to setup the ax25-utilities package for Amateur Radio such that it makes Netrom Nodes for the Node program and the BBS software from John-Paul Roubelat, F6FBB.

- Scientific-Computing-with-GNU-Linux, *Scientific Computing with Free GNU/Linux Software HOWTO*

  Updated: Oct 2004. Aims to show how a PC running GNU/Linux can be used for scientific computing. It lists the various available free software and also links on the world wide web to tutorials on getting started with the tools.
- Wearable-HOWTO, *Wearable HOWTO*

  Updated: Nov 2000. Nomadism is one of the major trends of our society, now most of the people can work with a laptop computer, but few did the next step: to live, or if you prefer to wear one computer - that is a wearable.

4.9. Archived Documents

4.9.1. Archived Documents

The following documents have been archived by the LDP. They are kept here for historical purposes only and (in general) pertain to older Linux systems.

- Bangla-PDF-HOWTO, *Bangla PDF HOWTO*

  Archived: Dec 2005.
- Bridge+Firewall+DSL, *Bridge + Firewall + DSL Mini-HOWTO*

  Archived: Dec 2005.
- BTI-PPP, *BTinternet PPPd mini-HOWTO*

  Archived: Dec 2005.
- CD-Distributions-EN-HOWTO, *English-language GNU/Linux distributions on CD-ROM*

  Archived: Dec 2005.
- CSPM-HOWTO, *Complete System Performance Monitor HOWTO*

  Archived: Dec 2005.
- Ext2fs-Undeletion-Dir-Struct, *Ext2fs Undeletion of Directory Structures*

  Archived: Dec 2005.
- FDU, *XFree86 Font De-uglification HOWTO*

  Archived: Dec 2005.
- Game-Server-HOWTO, *Game Server HOWTO*

  Archived: Dec 2005.
- IP-Subnetworking, *IP Sub-Networking mini-HOWTO*

  Archived: Dec 2005.
- ISP-Connectivity, *ISP-Connectivity mini-HOWTO*

  Archived: Dec 2005.
- KDE-GUI-Login-Configuration-HOWTO, *KDE GUI Login Configuration HOWTO*

Archived: May 2006.

- KDE-Kiosk-Mode, *KDE-Kiosk-Mode HOWTO*

Archived: Dec 2005.

- KickStart-HOWTO, *RedHat Linux KickStart HOWTO*

Archived: Dec 2005.

- LDAP-Implementation-HOWTO, *LDAP Implementation HOWTO*

Archived: Dec 2005.

- Linux+XFS-HOWTO, *Linux + XFS HOWTO : Linux on Steroids*

Archived: Dec 2005.

- Loopback-Encrypted-Filesystem-HOWTO, *Loopback Encrypted Filesystem HOWTO*

Archived: Dec 2005.

- Loopback-Root-FS, *The Loopback Root Filesystem HOWTO*

Archived: Dec 2005.

- MGR-HOWTO, *The MGR Window System HOWTO*

Archived: Dec 2005.

- MMBase, *MMBase Mini-HOWTO: Installation on Debian Woody*

Archived: Dec 2005.

- Oracle-8-HOWTO, *Oracle 8i for Linux Installation HOWTO*

Archived: Dec 2005.

- SCSI-Programming-HOWTO, *The Linux SCSI programming HOWTO*

Archived: Dec 2005.

- Snort-Statistics-HOWTO, *Snort-Setup for Statistics HOWTO*

Archived: Dec 2005.

- Term-Firewall, *Using Term to Pierce an Internet Firewall*

Archived: Dec 2005.

- Ultra-DMA, *The Linux Ultra-DMA Mini-Howto*

Archived: Dec 2005.

- USB-Digital-Camera-HOWTO, *USB Digital Camera HOWTO*

Archived: Dec 2005.

- VPN, *(old) The VPN HOWTO*

Archived: Dec 2005.

- WWW-HOWTO, *Linux WWW HOWTO*

Archived: Dec 2005.

Chapter 5. Single list of HOWTOs

The following Linux HOWTOs are currently available:

- 3-Button-Mouse, *The 3 Button Serial Mouse mini-HOWTO*

  Updated: May 1998. How to get a 3 button serial mouse working properly under Linux.
- 3D-Modelling, *3D Graphics Modelling and Rendering mini-HOWTO*

  Updated: Mar 2001. Details download and installation instructions for a graphics rendering and modelling development environment using RedHat Linux.
- 4mb-Laptops, *4mb Laptop HOWTO*

  Updated: Apr 2000. Put a "grown-up" Linux on a small-spec (4mb RAM, <=200mb hard disk) laptop.
- 8021X-HOWTO, *802.1X Port-Based Authentication HOWTO*

  Updated: Oct 2004. Describes the software and procedures to set up and use IEEE 802.1X Port-Based Network Access Control using Xsupplicant as Supplicant with FreeRADIUS as a back-end Authentication Server.
- Accessibility-HOWTO, *Linux Accessibility HOWTO*

  Updated: Jun 2002. Covers the use of adaptive technologies that are available for Linux.
- Accessibility-Dev-HOWTO, *How to Develop Accessible Linux Applications*

  Updated: May 2002. Provides Linux software developers with guidelines and test cases for developing accessible Linux applications.
- ACP-Modem, *Linux ACP Modem (Mwave) mini-HOWTO*

  Updated: Jul 2002. Describes how to build, setup, and use the ACP (Mwave) Modem feature of the IBM Thinkpad[tm] 600E, 600, and 770x.
- ACPI-HOWTO, *ACPI: Advanced Configuration and Power Interface*

  Updated: Jul 2004. Outlines how to patch a kernel for ACPI support; which allows control of power management from within the operating system.
- ADSL HOWTO for Linux Systems - *replaced by the DSL HOWTO for Linux.*
- ADSL-Bandwidth-Management-HOWTO, *ADSL Bandwidth Management HOWTO*

  Updated: Apr 2003. Describes how to configure a linux router to more effectively manage outbound traffic on an ADSL modem.
- ADSM-Backup, *Linux ADSM mini-HOWTO*

  Updated: Jan 1997. How to install and use a client for the commercial ADSM backup system for Linux/i386.
- Adv-Bash-Scr-HOWTO - *replaced by the Advanced Bash-Scripting Guide.*
- Adv-Routing-HOWTO, *Linux Advanced Routing & Traffic Control HOWTO*

  Updated: Jul 2002. A very hands-on approach to iproute2, traffic shaping and a bit of netfilter.
- Advocacy, *Linux Advocacy mini-HOWTO*

Updated: May 2000. Suggestions for how the Linux community can effectively advocate the use of Linux.

- AI-Alife-HOWTO, *Linux AI & Alife HOWTO*

  Updated: Mar 2013. Information about, and links to, various AI related software libraries, applications, etc. that work on the Linux platform.
- Alpha-HOWTO, *Brief Introduction to Alpha Systems and Processors*

  Updated: Jun 1997. A brief overview of existing Alpha CPUs, chipsets and systems.
- Alsa-sound, *Alsa-sound-mini-HOWTO*

  Updated: Nov 1999. Describes the installation of the ALSA sound drivers for Linux.
- Antares-RAID-sparcLinux-HOWTO, *Antares-RAID-sparcLinux-HOWTO*

  Updated: May 2002. Describes how to install, configure, and maintain a hardware RAID built around the 5070 SBUS host based RAID controller by Antares Microsystems.
- Apache-Compile-HOWTO, *Apache Compile HOWTO (Linux edition)*

  Updated: Feb 2003. Describes how to compile the Apache Webserver with important modules like mod_perl, mod_dav, mod_auth_ldap, mod_dynvhost, mod_roaming, mod_jserv, and mod_php.
- Apache-mods, *Apache+DSO+mod_ssl+mod_perl+php+mod_auth_nds+mod_auth_mysql+mod_fastcgi mini-HOWTO*

  Updated: Apr 2000. Details the installation of an Apache based webserver suite configured to handle DSO, and various useful modules including mod_perl, mod_ssl and php.
- Apache-Overview-HOWTO, *Apache Overview HOWTO*

  Updated: Oct 2002. An overview of the Apache webserver and related projects. It provides pointers for further information and implementation details.
- Apache+SSL+PHP+fp, *Linux Apache SSL PHP/FI frontpage mini-HOWTO*

  Updated: Jul 1998. About building a multipurpose webserver that will support dynamic web content via the PHP/FI scripting language, secure transmission of data based on Netscape's SSL, secure execution of CGI's and MS Frontpage Server Extensions.
- Apache-WebDAV-LDAP-HOWTO, *Apache based WebDAV Server with LDAP and SSL HOWTO*

  Updated: Oct 2003. A HOWTO on implementing WebDAV services using Apache - with LDAP for authentication and SSL for ensuring security of the DAV stores.
- Assembly-HOWTO, *Linux Assembly HOWTO*

  Updated: Mar 2013. How to program in assembly language using FREE programming tools, focusing on development for or from the Linux Operating System on IA-32 (i386) platform.
- Astronomy-HOWTO, *Linux Astronomy HOWTO*

  Updated: Apr 2007. Document shares tips and resources to utilize Linux solutions in the pursuit of Astronomy.
- ATA-RAID-HOWTO, *Linux ATA RAID HOWTO*

  Updated: May 2002. Explains how to install Linux on an Intel Pentium compatible computer with an ATA RAID Controller (onboard chip or seperate card), single or multiple processors and at least two

hard disks.

- Athlon-Powersaving-HOWTO, *Athlon Powersaving HOWTO*

  Updated: Jun 2007. How to enable the power-saving functionality of the Athlon/Duron/AthlonXP processor on some motherboards/chipsets.
- ATM-Linux-HOWTO, *ATM on Linux HOWTO*

  Updated: Oct 2001. Describes how to install, setup, and configure the necessary drivers and tools to support ATM networking under Linux.
- Authentication-Gateway-HOWTO, *Authentication Gateway HOWTO*

  Updated: Nov 2002. Document explains how to setup an authentication gateway.
- Autodir-HOWTO, *Autodir HOWTO*

  Updated: May 2007. Autodir installation, configuration and other issues related to Autodir.
- Automount, *Automount mini-HOWTO*

  Updated: Dec 2002. Describes the autofs automounter, how to configure it; points out some problems to avoid.
- Aviation-HOWTO, *GNU/Linux Aviation HOWTO: Flying with GNU/Linux*

  Updated: Sep 2006. Intended to provide pointers to software packages that run under GNU/Linux and are usefull to pilots (private, commercial or military), airlines, airports or any actors in the aeronautical domain.
- Avr-Microcontrollers-in-Linux-Howto, *AVR Microcontrollers in Linux HOWTO*

  Updated: Apr 2009. For readers wishing to program an AVR microcontroller using a GNU/Linux machine.
- AX25-HOWTO, *Linux Amateur Radio AX.25 HOWTO*

  Updated: Sep 2001. How to install and configure support for the AX. 25 packet radio protocol utilized by Amateur Radio Operators worldwide.
- BackspaceDelete, *Linux Backspace/Delete mini-HOWTO*

  Updated: Jan 2002. Solutions for having working Backspace and Delete keys on the console and on X.
- Backup-With-MSDOS, *Backup-With-MSDOS mini-HOWTO*

  Updated: Aug 1997. How to use a Linux-compatible tape drive installed on an MS-DOS machine to back up the filesystem of a Linux machine.
- Bandwidth-Limiting-HOWTO, *Bandwidth Limiting HOWTO*

  Updated: Nov 2001. Describes how to set up your Linux server to limit download bandwidth or incoming traffic, and how to use your internet link more efficiently.
- Bangla-HOWTO, *Bengali in GNU/Linux HOWTO*

  Updated: Oct 2003. A document to setup and develop support for Bengali (Bangla) in GNU/Linux.
- Bash-Prog-Intro-HOWTO, *BASH Programming - Introduction HOWTO*

  Updated: Jul 2000. This article intends to help you to start programming basic-to-intermediate shell scripts.

- Bash-Prompt-HOWTO, *Bash Prompt HOWTO*

  Updated: Nov 2003. Creating and controlling terminal and xterm prompts is discussed, including incorporating standard escape sequences to give username, current working directory, time, etc.
- Battery-Powered, *Battery Powered Linux Mini-HOWTO*

  Updated: Jul 2003. How to optimize and configure power management on a ready-configured Linux system for use on battery-powered laptops.
- Belarusian-HOWTO, *Linux Belarusian HOWTO*

  Updated: Feb 2001. Short guide in setting up Belarusian language support in Linux console, X Window System, web-browsers, text editors, etc. Charsets described are windows-1251, iso-8859-5 and koi8-ru. *Written in English*.
- Belgian-HOWTO, *The Belgian HOWTO*

  Updated: Feb 2003. How to tweak Linux for Belgian users; lists Linux user groups, businesses and other resources in Belgium.
- Benchmarking-HOWTO, *Linux Benchmarking HOWTO*

  Updated: Aug 1997. Discusses some issues associated with the benchmarking of Linux systems and presents a basic benchmarking toolkit.
- Beowulf-HOWTO, *Beowulf HOWTO*

  Updated: Jan 2005. Describes step by step instructions on building a Beowulf cluster. This is a Red Hat and LAM specific version of this document.
- Boca, *Installing Boca Card Mini-HOWTO*

  Updated: Jan 2001. Describes the basics of a Boca 16-port serial card (Boca 2016) with Linux.
- BogoMips, *BogoMips mini-HOWTO*

  Updated: Mar 2006. Some information about BogoMips, compiled from various sources.
- Boot+Root+Raid+LILO, *Boot + Root + Raid + Lilo : Software Raid mini-HOWTO*

  Updated: Jul 2000. A cookbook for setting up root raid using the 0.90 raidtools for bootable raid mounted on root using standard LILO.
- Bootdisk-HOWTO, *The Linux Bootdisk HOWTO*

  Updated: Jan 2002. How to design and build your own boot/root diskettes for Linux.
- BootPrompt-HOWTO, *The Linux BootPrompt HOWTO*

  Updated: Mar 2003. A compilation of all the possible boot time arguments that can be passed to the Linux kernel at boot time. Includes all kernel and device parameters.
- Bridge, *Bridging mini-HOWTO*

  Updated: May 2002. Describes how to setup an ethernet bridge.
- Bridge+Firewall, *Linux Bridge + Firewall Mini-HOWTO*

  Updated: Dec 1997. A bridge is an intelligent connection wire between two network cards. A firewall is an intelligent insulator.
- BRIDGE-STP-HOWTO, *Linux Bridge-STP-HOWTO*

Updated: Jan 2001. Describes how to setup a bridge with the recent kernel patches and brctl utility by Lennert Buytenhek. With developer kernel 2.3.47 the new bridging code is part of the mainstream. On 20.06.2000 there are patches for stable kernels 2.2.14 and 2.2.15.

- BTTV, *The BTTV HOWTO*

Updated: Jan 2005. Assists the reader in the steps necessary to configure and use a video tuner card based on the popular Bt848 and Bt878 chipsets within the Linux operating system.

- Bzip2, *Bzip2 mini-HOWTO*

Updated: Aug 1999. How to use the bzip2 compression program.

- C++Programming-HOWTO, *C++ Programming HOWTO*

Removed: November 2002. This HOWTO has been removed for review.

- C++-dlopen, *C++ dlopen mini HOWTO*

Updated: Mar 2006. How to dynamically load C++ functions and classes using the dlopen API.

- C-C++Beautifier-HOWTO, *C-C++ Beautifier HOWTO*

Removed: November 2003. This HOWTO has been removed for review.

- C-editing-with-VIM-HOWTO, *C editing with VIM HOWTO*

Updated: Jan 2001. An introduction to editing C and other language files whose syntax is similar like C++ and Java in vi/VIM.

- Cable-Modem, *Cable Modem HOWTO*

Updated: Jul 2004. Written to assist the Linux user in configuring a cable modem for internet access using a cable network.

- Call-back, *call-back mini HOWTO*

Updated: Oct 2001. How to set up call-back by using the Linux system and modem.

- Caudium-HOWTO, *Caudium HOWTO*

Updated: Sep 2002. An overview of the Caudium (web) server. Includes information on setup, development, and optimization.

- CDServer-HOWTO, *CDServer-HOWTO*

Updated: Jan 2002. Describes the steps and commands you can use to setup your own CD Server using Linux and some built-in Unix commands along with other freely available software packages.

- CD-Writing-HOWTO, *CD-Writing HOWTO*

Updated: Jul 2000. Explains how to write CD-ROMs under Linux.

- CDROM-HOWTO, *The Linux CD-ROM HOWTO*

Updated: Jul 2001. How to install, configure, and use CD-ROM drives under Linux.

- Chinese-HOWTO, *Chinese HOWTO*

Updated: Jun 1998. Demonstrates how to implement Chinese on Linux system, including those common problems encountered while using Chinese, the ways to obtain, and shows how to install and setup a variety of different Chinese software.

- Chroot-BIND-HOWTO, *Chroot-BIND HOWTO*

Updated: Dec 2001. Describes installing the BIND 9 nameserver to run in a chroot jail and as a non-root user, to provide added security and minimise the potential effects of a security compromise.

- Chroot-BIND8-HOWTO, *Chroot-BIND8 HOWTO*

Updated: Jul 2001. Describes installing the BIND 8 nameserver to run in a chroot jail and as a non-root user, to provide added security and minimise the potential effects of a security compromise.

- Cipe+Masq, *The Linux Cipe+Masquerading mini-HOWTO*

Updated: Apr 1999. How to setup a VPN using Cipe on a linux masquerading firewall.

- Clock, *The Clock Mini-HOWTO*

Updated: Nov 2000. How to set and keep your computer's clock on time.

- Clone-HOWTO, *HOWTO Clone Disk Images on Linux Booted from a Network*

Updated: Sep 2002. Describes a setup that allows a machine to boot Linux from BOOTP/TFTP, using the Grub boot loader, and save and restore disk and partition images to and from a TFTP server.

- Cluster-HOWTO, *Linux Cluster HOWTO*

Updated: Sep 2005. How to set up high-performance Linux computing clusters.

- Coffee, *Coffee Making*

Updated: Aug 2004. Yes, Linux DOES make coffee, and it tastes good.

- Commercial-HOWTO, *Linux Commercial HOWTO*

Updated: Mar 1999. A listing of commercial software and applications which are offered for Linux.

- Commercial-Port-Advocacy, *Commercial Port Advocacy mini-HOWTO*

Updated: Dec 1999. Discusses methods that can be used to approach commercial software companies to convince them to port their programs to Linux.

- Compaq-Remote-Insight-Board-HOWTO, *HOWTO Use a Compaq Remote Insight Lights Out Edition for a Headless, Remote Linux Installation*

Updated: Apr 2002. Describes the installation of Linux on a headless Compaq ProLiant server with a Compaq Remote Insight Lights-Out Edition card without physical access to the system.

- Compaq-T1500-HOWTO, *CompaqT1500-Linux HOWTO*

Updated: Sep 2007. Lists the procedures and tools needed to boot the Compaq T1500, using a Netboot of both the native file system and a generic Linux installation.

- Compressed-TCP, *Compressed TCP/IP-Sessions using SSH-like tools*

Updated: Apr 2000. Discusses how to compress data streams.

- Conexant+Rockwell-modem-HOWTO, *Conexant/Rockwell modem HOWTO*

Updated: Mar 2002. A guide to using Conexant and Rockwell chipset based Software modems under Linux.

- Config-HOWTO, *Configuration HOWTO*

Updated: May 2006. Document from which every others can refer to configure most common hardware and services.

- Linux Consultants HOWTO - *replaced by the Linux Consultants Guide.*
- CPU-Design-HOWTO, *CPU Design HOW-TO*

Updated: Feb 2003. Helps people understand how a CPU is designed and manufactured. Contains references to various resources.

- Cryptoloop-HOWTO, *Cryptoloop HOWTO*

Updated: Mar 2004. Eplains how to create encrypted file systems using the Cryptoloop functionality. Cryptoloop is part of the CryptoAPI in the 2.6 Linux kernel series.

- CVS-RCS-HOWTO, *CVS-RCS HOWTO for Linux (Source Code Control System)*

Removed: November 2003. This HOWTO has been removed for review.

- Cyrus-IMAP, *Cyrus IMAP HOWTO*

Updated: Oct 2000. A comprehensive guide to installing, configuring, and running Cyrus Imap and Cyrus Sasl.

- Danish-HOWTO, *The Linux Danish/International HOWTO*

Updated: Mar 2000. How to configure Linux and various Linux applications for Danish locale standards such as keyboard, font, paper-size etc.

- DB2-HOWTO, *IBM DB2 Express-C for Linux HOWTO*

Updated: Aug 2007. Intended for anyone interested in installing and using IBM DB2® Express-C 9 database on Linux®.

- Debian-Binary-Package-Building-HOWTO, *Debian Binary Package Building HOWTO*

Updated: Aug 2005. Shows how to build a minimal Debian .deb package.

- Debian-and-Windows-Shared-Printing, *Debian and Windows Shared Printing mini-HOWTO*

Updated: Jul 2005. Demonstrates how to use command-line tools to configure your Debian system for printing. It explains how to send documents from Linux to Windows printers and how to share Linux printers with Windows PCs.

- Debian-Jigdo, *Debian Jigdo mini-HOWTO*

Updated: Dec 2005. Describes why you should use jigdo (a tool for obtaining Debian ISOs), a little bit about how it works and how you use it to get and update Debian ISOs.

- DHCP, *DHCP mini-HOWTO*

Updated: Oct 2000. Answers basic questions on how to set up your Linux box to serve as a DHCP server or a DHCP client.

- Diald-HOWTO, *Diald HOWTO*

Updated: Apr 2000. Shows some typical scenarios for easy start using Diald. *Replaces the Diald mini-HOWTO*.

- Disk-Encryption-HOWTO, *Disk Encryption HOWTO*

Updated: Nov 2004. A method is described for encrypting a hard disk, either in whole or in part, with the encryption key stored on an external medium for increased security.

- Diskless-HOWTO, *Diskless Nodes HOWTO for Linux*

Removed: November 2003. This HOWTO has been removed for review.

- Diskless-root-NFS-HOWTO, *Root over nfs clients & server HOWTO*

Updated: Mar 1999. How to setup a server and configure clients for diskless operation from a network.

- Diskless-root-NFS-other-HOWTO, *Root over NFS - Another Approach*

Updated: Sep 2001. Another approach to Diskless-root-NFS-HOWTO.

- Disk-on-Chip-HOWTO, *Disk on Chip HOWTO*

Updated: Sep 2006. Discusses how to make the Flash Drives Linux bootable. Describes how to boot from such a drive, instead of from the normal hard drive.

- Divert-Sockets-mini-HOWTO, *Divert Sockets mini-HOWTO*

Updated: Feb 2000. Describes how to get, compile and use FreeBSD divert sockets under Linux 2.2.12.

- DNS-HOWTO, *DNS HOWTO*

Updated: Dec 2001. How to become a totally "small time" DNS admin.

- DocBook-Demystification-HOWTO, *DocBook Demystification HOWTO*

Updated: Sep 2010. Attempts to clear the fog and mystery surrounding the DocBook markup system and the tools that go with it.

- DocBook-Install, *DocBook Install mini-HOWTO*

Updated: Feb 2002. A detailed practical guide for novices to quickly getting DocBook installed and processing SGML files into HTML, PostScript and PDF on a GNU/Linux system.

- DocBook-OpenJade-SGML-XML-HOWTO, *DocBook XML/SGML Processing Using OpenJade*

Updated: Jul 2003. Explains setting up OpenJade to process SGML/XML DocBook documents.

- Domain, *Setting Up Your New Domain Mini-HOWTO*

Updated: Oct 2000. Outlines the things you will probably have to do when you want to set up a network of computers under your own domain.

- DOS-Win-to-Linux-HOWTO, *From DOS/Windows to Linux HOWTO*

Updated: Aug 2000. Written for all the DOS and Windows users who have decided to switch to Linux.

- DOSEMU-HOWTO, *The dosemu HOWTO*

Updated: Dec 2002. DOSEMU stands for DOS Emulation, and is an application that enables the Linux OS to run many DOS programs.

- DPT-Hardware-RAID-HOWTO, *Linux DPT Hardware RAID HOWTO*

Updated: Aug 2004. How to set up hardware RAID under Linux.

- DSL-HOWTO, *DSL HOWTO for Linux*

Updated: Jul 2002. Examines the DSL family of high speed Internet services now being deployed in various markets worldwide. Information is included on the technology behind DSL as well as subscribing, installing, configuring, and troubleshooting.

- DVD-HOWTO, *Linux DVD HOWTO*

Updated: Oct 2000. An easy to follow explanation on how to get DVD movie play-back in Linux.

- DVD-Playback-HOWTO, *DVD Playback HOWTO*

Updated: Feb 2004. This document describes how to view DVD movies on a Linux computer with a DVD drive.

- Ecology-HOWTO, *Linux Ecology HOWTO*

  Updated: Aug 2009. Discusses ways to make computers less harmful to our environment and to solve some ecological issues. It explains how to use Linux to save power and consumables like paper and ink. Since it does not require big hardware, Linux may be used with old computers to make their life cycle longer. Games may be used in environmental education and software is available to simulate ecological processes.
- Emacs-Beginner-HOWTO, *Emacs Beginner's HOWTO*

  Updated: Mar 2001. Introduces Linux users to the Emacs editor.
- Emacspeak-HOWTO, *Installing Emacspeak HOWTO*

  Updated: Jul 2002. Installation instructions for the Emacspeak audio desktop application for Linux.
- Encourage-Women-Linux-HOWTO, *HOWTO Encourage Women in Linux*

  Updated: Oct 2002. Explains some of the difficulties and biases women face in the Linux community and examines various strategies for addressing those difficulties in order to encourage more participation by women.
- Encrypted-Root-Filesystem-HOWTO, *Encrypted Root Filesystem HOWTO*

  Updated: Mar 2005. Explains how to make your personal data secure by encrypting your Linux root filesystem using strong cryptography.
- Enterprise-Java-for-Linux-HOWTO, *Enterprise Java for Linux HOWTO*

  Updated: Nov 2001. How to set up an Enterprise Java environment on Linux including a JDK, a Web server, supporting Java servlets, accessing a database via JDBC, and supporting Enterprise Java Beans (EJBs).
- Esperanto-HOWTO, *Linux-Esperanto-HOWTO*

  Updated: Aug 1999.
- Ethernet-HOWTO, *Linux Ethernet HOWTO*

  Updated: Aug 2003. Information about which ethernet devices can be used for Linux, and how to set them up (focused on the hardware and low level driver aspect of the ethernet cards; see Network HOWTO for software configuration information).
- Ethernet-Bridge-netfilter-HOWTO, *Ethernet Bridge + netfilter Howto*

  Updated: Jul 2005. Information on setting up an ethernet bridge with a surveying and/or regulating instance into an existing network topology.
- Euro-Char-Support, *Euro Character Support mini HOWTO*

  Updated: Apr 2002. Describes how to make the Euro character support in GNU/Linux work.
- Event-HOWTO, *Event HOWTO*

  Updated: Nov 2000. The purpose of this document is to show you how to create good presentations for almost any sort of Linux event.
- Ext2fs-Undeletion, *Linux Ext2fs Undeletion mini-HOWTO*

Updated: Feb 1999. Presents a discussion of how to retrieve deleted files from a Second Extended File System.

- Fax-Server, *Linux simple fax printer/server mini-HOWTO*

Updated: Nov 1997. Describes in detail one of the simplest ways to setup a fax server on your Linux system.

- FBB, *FBB Packet-radio BBS mini-HOWTO*

Updated: Jul 2010. Covers the installation and use of the most popular amateur packet-radio BBS software FBB.

- Fedora-Multimedia-Installation-HOWTO, *Fedora Multimedia Installation HOWTO*

Updated: Mar 2006. How to get various proprietary and restricted multimedia Damned Things (Flash, MP3, Java, mpeg, avi, Real Media, Windows Media) working under Fedora.

- Filesystems-HOWTO, *Filesystems HOWTO*

Updated: Jan 2007. About filesystems and accessing filesystems.

- Finnish-HOWTO, *Finnish HOWTO*

Updated: Jan 2005. Describes how to localize GNU/Linux for Finnish users (written in Finnish).

- Firewall-HOWTO, *Firewall and Proxy Server HOWTO*

Updated: Feb 2000. Designed to describe the basics of firewall systems and give you some detail on setting up both a filtering and proxy firewall on a Linux based system.

- Firewall-Piercing, *Firewall Piercing mini-HOWTO*

Updated: Nov 2001. Directions for using ppp over telnet to do network activities transparently through an Internet firewall.

- Flash-Memory-HOWTO, *USB Flash Memory HOWTO*

Updated: Mar 2004. Describes procedures for installing USB Flash Memory devices and the way of formatting them for various file systems such as vfat (the way they usually come) and ext2 (the way they fit in better with Linux).

- Font-HOWTO, *Optimal Use of Fonts on Linux (Font HOWTO)*

Updated: Apr 2007. Provides a comprehensive source to act as a starting point for any and all font questions about Linux.

- Framebuffer-HOWTO, *Framebuffer HOWTO*

Updated: Aug 2010. How to use the framebuffer devices in Linux with a variety of platforms. Also includes how to set up multi-headed displays.

- Francophones-HOWTO, *Le Francophones-HOWTO : Linux & la langue française*

Updated: Dec 2001.

- From-PowerUp-To-Bash-Prompt-HOWTO, *From Power Up To Bash Prompt*

Updated: Nov 2000. A brief description of what happens in a Linux system from the time that you turn on the power, to the time that you log in and get a bash prompt.

- Ftape-HOWTO, *Ftape HOWTO*

Updated: Aug 1998. Discusses essential do's and dont's for the ftape floppy tape driver under Linux. Focuses on the newest version (ftape-4.02 at the time of this writing).

- FTP, *FTP mini-HOWTO*

Updated: Jan 2000. How to use ftp clients and servers

- GCC-Frontend-HOWTO, *GCC Frontend HOWTO*

Updated: Aug 2002. Creating a new GCC front end.

- German-HOWTO, *German HOWTO*

Updated: Dec 2001. Addresses Linux localization issues specific to German users (written in German).

- GIS-GRASS, *GIS-GRASS mini-HOWTO*

Updated: Nov 1997. How to acquire, install and configure a powerful scientific public-domain Geographic Information System (GIS): the Geographic Resources Analysis Support System (GRASS).

- Glibc-Install-HOWTO, *Glibc Installation HOWTO*

Updated: Mar 2004. Explains how you install a new version of glibc on your system.

- Glibc2-HOWTO, *Glibc 2 HOWTO*

Updated: Jun 1998. Covers installing and using the GNU C Library version 2 (libc6) on Linux systems.

- Handspring-Visor, *Handspring-Visor with Linux mini-HOWTO*

Updated: Jan 2003. Using the Visor with Linux and your USB port.

- Hard-Disk-Upgrade, *Hard Disk Upgrade Mini HOWTO*

Updated: Apr 2000. How to copy a Linux system from one hard disk to another.

- Hardware-HOWTO, *Linux Hardware Compatibility HOWTO*

Updated: May 2007. Lists most of the hardware supported by Linux and helps you locate any necessary drivers.

- Hebrew-HOWTO, *The Hebrew HOWTO*

Updated: Sep 1995. How to configure your Linux machine to use Hebrew characters on X-Windows and Virtual Consoles.

- Hellenic-HOWTO, *Hellenic HOWTO*

Updated: Aug 1997. Addresses Linux localization issues specific to Greek users (written in Hellenic).

- HighQuality-Apps-HOWTO, *Creating Integrated High Quality Linux Applications HOWTO*

Updated: Aug 2002. Tries to clarify some issues and give tips on how to create Linux applications highly integrated to the Operating System, security and easy of use.

- Home-Electrical-Control, *Home Electrical Device Control mini HOWTO*

Updated: Feb 2003. Use Linux to control your home electrical devices.

- Home-Network-mini-HOWTO, *Red Hat Linux 6.x as an Internet Gateway for a Home Network*

Updated: Jun 2000. Tutorial on configuring Red Hat 6 and related variants to operate as an internet gateway to a small home or office network. Topics covered include masquerading, DNS, DHCP, and basic security.

- Howtos-with-LinuxDoc, *Howtos-with-LinuxDoc mini-HOWTO*

Updated: Nov 2007. This is about how to write HOWTOs using the simple LinuxDoc markup. It's primarily for Linux Documentation Project authors (and future fledging authors who want to get started fast). If you want to use the more advanced DocBook markup (including XML) see the LDP Author Guide.

- HOWTO HOWTO - *replaced by the LDP Author Guide.*
- HOWTO-INDEX, *LDP HOWTO INDEX*

Updated: frequently. Index to the Linux HOWTOs as well as other information about the LDP.

- HP-HOWTO, *HP HOWTO - Utilisation and Configuration Guide of HP Products under Linux*

Updated: Dec 2001. Describes the use of products available in the Hewlett-Packard (HP) catalog with Linux and some free software.

- i810-HOWTO, *i810 with XFree86 4.x HOWTO*

Updated: May 2001. Describes getting XFree86 4.x running on Intel's i810 graphics chipset by using special features of the 2.4.0 kernel.

- IBM7248-HOWTO, *Installing GNU/Linux on the IBM RS/6000 43P model 7248 HOWTO*

Updated: Jun 2003. Describes the installation of GNU/Linux on the IBM RS/6000 43P model 7248 series.

- Implement-Sys-Call-Linux-2.6-i386, *Implementing a System Call on Linux 2.6 for i386*

Updated: Oct 2006. Information about implementing system calls in the Linux operating system for i386 architecture with 2.6 kernels.

- Indic-Fonts-HOWTO, *The Indic Fonts HOWTO*

Updated: Jan 2002. A detailed guide on how to install and use Indic scripts (devanagri etc.) using UTF-8 encoding under GNU/Linux.

- INFO-SHEET, *Linux Information Sheet*

Updated: Sep 1998. Provides basic information about the Linux operating system, including an explanation of Linux, a list of features, some requirements, and some resources.

- Infrared-HOWTO, *Linux Infrared HOWTO*

Updated: Oct 2011. Introduction to Linux and infrared devices and how to use the software provided by the Linux/IrDA project.

- IngresII-HOWTO, *Ingres II HOWTO*

Updated: Sep 2001. Helps install the Ingres II Relational Database Management System on Linux.

- Installation-HOWTO, *The Linux Installation HOWTO*

Updated: Jul 2002. How to obtain and install Linux software. It is the first document which a new Linux user should read to get started.

- Installfest-HOWTO, *Linux Installfest HOWTO*

Updated: Jan 2012. Provides some guidelines that should help you run a successful installfest.

- Install-From-ZIP, *Linux Install From PPA-Zip drive mini-HOWTO*

  Updated: Apr 1998. How to install Linux from a parallel port zip drive using the Slackware Linux distribution.
- Install-Strategies, *Linux Installation Strategies*

  Updated: May 2001. Discusses a few installation strategies for those who intend to dual-boot between Windows and Linux.
- Intkeyb, *How to setup international keyboard in X Windows*

  Updated: Nov 2002. This xmodmap and kimap solutions will work for you in setting up any international keyboard for (Debian, RedHat, Mandrake, Corel) Linux, FreeBSD, OpenBSD, NetBSD and possibly every Unix that uses Xfree86 and KDE.
- Intranet-Server-HOWTO, *The Linux Intranet Server HOWTO*

  Updated: Dec 2001. How to setup an Intranet using Linux as the server which binds Unix, Netware, NT and Windows together.
- IO-Perf-HOWTO, *I/O Performance HOWTO*

  Updated: May 2002. Covers information on available patches for the 2.4 kernel that will improve the I/O performance of your Linux operating system.
- IO-Port-Programming, *Linux I/O port programming mini-HOWTO*

  Updated: Dec 2000. Describes programming hardware I/O ports and waiting for small periods of time in user-mode Linux programs running on the Intel x86 architecture.
- IP-Alias, *Setting Up IP Aliasing On A Linux Machine Mini-HOWTO*

  Updated: Jan 2001. How to set up and run IP aliasing on a Linux box.
- IPCHAINS-HOWTO, *Linux IPCHAINS HOWTO*

  Updated: Jul 2000. How to obtain, install and configure the enhanced IP firewalling chains software for Linux, and some ideas on how you might use them.
- IP-Masquerade-HOWTO, *Linux IP Masquerade HOWTO*

  Updated: Nov 2005. How to enable the Linux IP Masquerade feature on a given Linux host.
- IPMasquerading+Napster, *IPMasquerading+Napster mini-HOWTO*

  Updated: Apr 2000. Present a way to allow users behind an IPMasq'd system to use Napster.
- IPX-HOWTO, *Linux IPX HOWTO*

  Updated: May 1998. How to obtain, install and configure various tools available for the Linux operating system that use the Linux kernel IPX protocol support.
- IRC, *Linux IRC mini-HOWTO*

  Updated: Jan 2005. Describes the basics of IRC and respective applications for Linux.
- ISP-Hookup-HOWTO, *ISP-Hookup HOWTO*

  Updated: Mar 1998. How to use Linux to connect to an Internet Service Provider via a dial-up modem TCP/IP connection (basic dial-up procedure and IP establishment, email and news handling is covered).
- ISP-Setup-RedHat-HOWTO, *"Pocket" ISP based on RedHat Linux*

Updated: Jan 2001. Outlines the setup of a single RedHat box for dial-ins,virtual web hosting, virtual email, POP3 and ftp servers.

- Italian-HOWTO, *Linux Italian HOWTO*

Updated: Nov 2004. Addresses Linux localization issues specific to Italian users (written in Italian).

- Jabber-Server-Farming-HOWTO, *Jabber Server Farming How-To*

Updated: Jun 2002. Provide Jabber admins a look into the present and future of Jabber Server Farming.

- Java-CGI-HOWTO, *Java CGI HOWTO*

Updated: Dec 1998. Explains how to set up your server to allow CGI programs written in Java and how to use Java to write CGI programs.

- Java-Decompiler-HOWTO, *Java Decompiler HOWTO*

Removed: November 2003. This HOWTO has been removed for review.

- JavaStation-HOWTO, *Linux on the Sun JavaStation NC HOWTO*

Updated: Oct 2001. Describes how to enable the GNU/Linux OS on the Sun JavaStation NC.

- Jaz-Drive-HOWTO, *Jaz-drive HOWTO*

Updated: Jan 2000. Covers the configuration and use of the 1Gb and 2Gb Iomega Jaz drives under Linux.

- K7s5a-HOWTO, *The Elite's K7s5a mainboard HOWTO*

Updated: May 2004. Describes how to use Elite's K7s5a board with Linux.

- Kerberos-Infrastructure-HOWTO, *Kerberos Infrastructure HOWTO*

Updated: May 2004. Describes the design and configuration of a Kerberos infrastructure for handling authentication with GNU/Linux. It details steps for a best practices method of setting up servers, Kerberos software,conversion of legacy systems, and answers frequently asked questions.

- Kernel-HOWTO, *The Linux Kernel HOWTO*

Removed: Nov 2003. This HOWTO has been removed for review.

- KernelAnalysis-HOWTO, *KernelAnalysis-HOWTO*

Updated: Mar 2003. Explains some things about the Linux Kernel, such as the most important components, how they work, and so on.

- Kerneld, *The Linux kerneld mini-HOWTO*

Updated: May 2000. Explains how you can use the kerneld function in the Linux kernels.

- Keyboard-and-Console-HOWTO, *The Linux keyboard and console HOWTO*

Updated: Oct 2002. Contains some information about the Linux (v2.0) keyboard and console, and the use of non-ASCII characters.

- Kiosk-HOWTO, *Kiosk HOWTO*

Updated: Oct 1999. Provides a guide for setting up a WWW-based kiosk using Linux, X11R6, FVWM2, Netscape Navigator 4.X, and a customized trackball.

- Kodak-Digitalcam-HOWTO, *Kodak Digital Camera HOWTO*

Updated: Jan 2001. Getting a Kodak digital camera working under GNU/Linux.

- Large-Disk-HOWTO, *Large Disk HOWTO*

Updated: Nov 2004. All about disk geometry and the 1024 cylinder limit for disks.

- Latvian-HOWTO, *Latvian HOWTO*

Updated: Jun 2002. Describes GNU/Linux localization issues specific for Latvian users (written in Latvian).

- LBX, *The LBX mini-HOWTO*

Updated: Dec 1997. LBX (Low Bandwidth X) is an X server extension which performs compression on the X protocol.

- LDAP-HOWTO, *LDAP Linux HOWTO*

Updated: Mar 2007. Information about installing, configuring, running and maintaining a LDAP (Lightweight Directory Access Protocol) Server on a Linux machine.

- LDP-Reviewer-HOWTO, *Linux Documentation Project Reviewer HOWTO*

Updated: May 2004. This document will help you review LDP documentation. It includes procedures, tips and techniques to make the process easier.

- Leased-Line, *Leased line mini-HOWTO*

Updated: Sep 2005. Configuring your modem and pppd to use a 2 wire twisted pair leased line.

- Lego, *Lego Mindstorm with Linux Mini-HOWTO*

Updated: Oct 2000. Intended to serve as a very brief introduction to the options available for using the Lego Group's Mindstorm Robotics Invention System (RIS) from within Linux.

- Lex-YACC-HOWTO, *Lex and YACC primer/HOWTO*

Updated: Apr 2002. Helps you get started using Lex and YACC.

- libdc1394-HOWTO, *Libdc1394 Library Support for IEEE 1394 Cameras HOWTO*

Updated: Apr 2007. Discusses how to set up the libdc1394 library on Linux for support of IEEE 1394 (FireWire) cameras.

- LILO, *LILO mini-HOWTO*

Updated: Jul 2010. Lilo (LILO) is the most used Linux Loader for the x86 flavour of Linux. This describes some typical Lilo installations. Intended as a supplement to the Lilo User's Guide.

- LILO-crash-rescue-HOWTO, *LILO, Linux Crash Rescue HOWTO*

Removed: November 2003. This HOWTO has been removed for review.

- Linksys-Blue-Box-Router-HOWTO, *Linksys Blue Box Router HOWTO*

Updated: Aug 2006. Hints and tips for managing Linksys routers from a Linux system, including the firmware upgrade procedure.

- Linmodem-HOWTO, *Linmodem-Mini-HOWTO*

Updated: Feb 2001. Describes Linmodem (winmodem hardware) support under Linux.

- Linux-i386-Boot-Code-HOWTO, *Linux i386 Boot Code HOWTO*

Updated: Feb 2004. Describes Linux i386 boot code, serving as a study guide and source commentary. In addition to C-like pseudocode source commentary, it also presents keynotes of toolchains and specs related to kernel development.

- Linux-Complete-Backup-and-Recovery-HOWTO, *Linux Complete Backup and Recovery HOWTO*

Updated: Mar 2006. A step-by-step tutorial on how to back up a Linux computer so as to be able to make a bare metal recovery, and how to make that bare metal recovery. Includes some related scripts. *"Bare metal recovery"* is the process of rebuilding a computer after a catastrophic failure.

- Linux-Crash-HOWTO, *Linux Crash HOWTO*

Updated: Jan 2002. Describes the installation and usage of the LKCD (Linux Kernel Crash Dump) package.

- Linux+DOS+Win95+OS2, *Linux-DOS-Win95-OS2 mini-HOWTO*

Updated: Nov 1997. Presents a procedure to make 4 operating systems co-exist on a single hard disk.

- Linux+FreeBSD, *The Linux+FreeBSD mini-HOWTO*

Updated: Mar 2000. How to use Linux and FreeBSD on the same system.

- Linux From Scratch HOWTO - *replaced by the Linux From Scratch guide.*
- Linux-Gamers-HOWTO, *The Linux Gamers' HOWTO*

Updated: Nov 2004. A stepping stone to get the most common problems resolved and to give people the knowledge to begin thinking intelligently about what is going on with their games.

- Linux-Init-HOWTO, *Linux 2.4.x Initialization for IA-32 HOWTO*

Updated: May 2001. A description of the Linux 2.4 kernel initialization sequence on IA-32 processors.

- Linux+IPv6-HOWTO, *Linux IPv6 HOWTO*

Updated: Dec 2009. The goal of this HOWTO is to answer both basic and advanced questions about IPv6 on the Linux operating system. This HOWTO will provide the reader with enough information to install, configure, and use IPv6 applications on Linux machines.

- Linux-Modem-Sharing *Modem sharing mini-HOWTO*

Updated: Aug 2001. Describes how to setup a Linux system in order to share a modem attached to this system with other systems over a TCP/IP network.

- Linux-Promise-RAID1-HOWTO, *Linux Migration to Promise RAID Card HOWTO*

Updated: Mar 2003. Outlines the steps of how to migrate an existing (Red Hat) Linux install onto a Promise TX2 Card for the purposes of RAID-1 Mirroring.

- Linux+NT-Loader, *NT OS Loader + Linux mini-HOWTO*

Updated: Sep 1997. Describes the use of the Windows NT boot loader to start Linux. This procedures have been tested with Windows NT 4.0 WS and Linux 2.0.

- Linux+Solaris, *Linux+Solaris mini-HOWTO*

Updated: Apr 2000. Describes how to use Solaris and Linux together on one machine. It addresses common questions like multibooting and file-sharing.

- Linux+Windows-HOWTO, *Linux + Windows HOWTO*

Updated: Dec 2001. Aimed at assisting those who wish to use the features of both Linux and Windows on the same host.

- Linux+Win95, *Linux + Windows 95 mini-HOWTO*

Updated: Apr 2001. Details how to install Linux on a machine that currently runs Windows 95.

- Linux+WinNT, *Linux+WindowsNT mini-HOWTO*

Updated: Jul 2010. Covers some ways on how to install both Linux and Windows NT on the same computer and how to boot either of them from within LILO menu.

- Linux+Win9x+Grub-HOWTO, *Linux+Win9x+Grub HOWTO*

Updated: Jan 2002. How to use the GRUB bootloader to turn your computer into a Windows + Linux dual boot machine, without affecting your current Linux installation.

- LinuxDoc+Emacs+Ispell-HOWTO, *LinuxDoc+Emacs+Ispell HOWTO*

Updated: Feb 1998. Aimed at writers and translators of Linux HOWTOs or any other paper for the Linux Documentation Project. Gives hints at using tools including Emacs and Ispell.

- Linuxdoc-Reference, *Linuxdoc Reference - An Introduction to the linuxdoc DTD*

Updated: Jan 2000. Intended to be a reference for the SGML document type definition linuxdoc.

- LinuxGL-QuakeWorld-mini-HOWTO, *LinuxGL (GLX) QuakeWorld Client compile mini-HOWTO*

Updated: Jan 2001. How to get the OpenGL/GLX Linux QuakeWorld client compiled and working on systems with standard OpenGL hardware acceleration support.

- Loadlin+Win95-98-ME, *The Loadlin+Win95/98/ME mini-HOWTO*

Updated: Feb 2001. Describes how to use Loadlin with Windows 95/98/ME to boot to Linux.

- Lotus-DominoR5, *Lotus Domino R5 for Linux mini-HOWTO*

Updated: Jan 2003. Instructions on installing Lotus Domino R5 for Linux on the Intel x86-based distributions of Mandrake Linux 8.1 and SuSE 7.3 Professional.

- LVM-HOWTO, *Logical Volume Manager HOWTO*

Updated: Nov 2006. Describes how to build, install, and configure LVM for Linux.

- Mac-Terminal, *The MacTerminal mini-HOWTO*

Updated: Nov 1997. How to configure the Mac for use as a Linux terminal.

- Mail-Administrator-HOWTO, *The Linux Electronic Mail Administrator HOWTO*

Updated: Jan 2000. Describes the setup, care and feeding of Electronic Mail (e-mail) under Linux. Primarily intended for administrators.

- Mail-Queue, *Linux Mail-Queue mini-HOWTO*

Updated: Dec 2001. Configuration changes necessary to make sendmail deliver local mail *now*; while stashing remote mail in the queue until *"I Say So"*.

- Mail-User-HOWTO, *The Linux Mail User HOWTO*

Updated: Feb 2003. An introduction to the world of electronic mail (email) under Linux. Focuses on user-level issues and typical configurations for Linux home and small-business machines connected to the net via an ISP.

- Mail2News, *Mail2News mini-HOWTO*

Updated: Nov 2000. How to feed a mailing list to a news server.

- Majordomo-MajorCool-HOWTO, *Majordomo and MajorCool HOWTO*

Updated: Nov 2000. Intended to guide a user through an installation of the Majordomo Mailing List Software and MajorCool (utility for managing Majordomo lists via a CGI script).

- Man-Page, *Linux Man Page HOWTO*

Updated: Sep 2002. Explains what you should bear in mind when you are going to write on-line documentation -- a so called man page -- that you want to make accessible via the man(1) command.

- Masquerading-Simple-HOWTO, *Masquerading Made Simple HOWTO*

Updated: Jul 2004. Describes how to enable the Linux IP Masquerade feature on a given Linux host. Should be used as a complement to the the IP-Masquerade-HOWTO.

- Medicine-HOWTO, *Linux Medicine-HOWTO*

Updated: Mar 2004. Some pointers to Linux software (mostly GPLed) for the medical sciences.

- META-FAQ, *Linux Meta-FAQ*

Updated: Oct 1997. Mainly a list of valuable sources of information for Linux. Use these sources if you want to learn more about Linux, or have problems and need help.

- MIDI-HOWTO, *The Linux MIDI-HOWTO*

Updated: May 2002. Describes the hardware, software and procedures needed to play and sequence using MIDI under Linux.

- MILO-HOWTO, *Alpha Miniloader HOWTO*

Updated: Nov 2000. Describes the Alpha Linux Miniloader (also known as MILO), a program for Alpha-based systems that can be used to initialize the machine and load Linux.

- MindTerm-SSH-HOWTO, *Encrypted Tunnels using SSH and MindTerm HOWTO*

Updated: Jun 2001. How to use SSH and the Java-based program MindTerm to create quick, secure, and reliable VPN-like tunnels over insecure networks.

- MMBase-Inst-HOWTO, *MMBase Installation HOWTO*

Updated: Jun 2006. Describes the installation of the MMBase content management system on a Red Hat Linux distribution, using the Tomcat application server, and integrating it with MySQL and Apache.

- Mobile-IPv6-HOWTO, *Linux Mobile IPv6 HOWTO*

Updated: Apr 2004. Describes the software and procedures to set up and use mobile IPv6 for Linux.

- Mock-Mainframe, *The Mock Mainframe Mini-HOWTO*

Updated: Oct 2005. A brief description of a standard way to set up and work with a computer network for a small group of people that is inexpensive to build, easy to administer, and relatively safe.

- Modem-HOWTO, *Modem HOWTO*

Updated: Jan 2007. Help with selecting, connecting, configuring, trouble-shooting, and understanding modems for a PC.

- Modem-Dialup-NT-HOWTO, *Modem-Dialup-NT HOW-TO*

Removed: November 2003. This HOWTO has been removed for review.

- Module-HOWTO, *Linux Loadable Kernel Module HOWTO*

  Updated: Sep 2006. Explains what Linux loadable kernel modules (LKMs) are, and how to use and create them.
- Modules, *Linux Modules Installation mini-HOWTO*

  Updated: n/a How to successfully set up Linux with modules configured and working.
- Motorola-Surfboard-Modem, *Motorola Surfboard 4100 + 4200 Series USB Cable Modem mini-HOWTO*

  Updated: May 2003. Written to assist the Linux user in setting up the Motorola Surfboard 4000 series of cable modems.
- Mozilla-Optimization, *Mozilla Optimization Mini-HOWTO*

  Updated: Jan 2003. How to make configuration and source level customizations of Mozilla to make it more suitable as a primary browser for Linux and X Windows.
- MP3-HOWTO, *The Linux MP3 HOWTO*

  Updated: Dec 2001. Describes the hardware, software and procedures needed to encode, play and stream MP3 sound files under Linux.
- MP3-Box-HOWTO, *MP3 Player Box HOWTO*

  Updated: Apr 2001. Describes how to build, configure, install, and use a custom MP3 player box. It lists the necessary hardware and answers a number of frequently asked questions.
- MP3-CD-Burning, *Linux MP3 CD Burning mini-HOWTO*

  Updated: Aug 2004. A complete recipe for creating audio CDs from MP3 files.
- MSSQL6-Openlink-PHP-ODBC, *Connecting to MS SQL 6.x+ via Openlink/PHP/ODBC mini-HOWTO*

  Updated: Jul 1997. How to connect to MS SQL 6.x+ database server via ODBC functions of PHP3 (3.0.1x or above) compiled with Openlink drivers under Linux.
- Multi-Disk-HOWTO, *HOWTO: Multi Disk System Tuning*

  Updated: May 2002. How best to use multiple disks and partitions for a Linux system.
- Multiboot-with-GRUB, *Multiboot with GRUB Mini-HOWTO*

  Updated: Jan 2001. How to install Windows 98, Windows 2000, DOS and Linux using GRUB.
- Multiboot-with-LILO, *Win95 + WinNT + Linux multiboot using LILO mini-HOWTO*

  Updated: Mar 1998. How to multiboot between Windows 95, Windows NT, and Linux.
- Multicast-HOWTO, *Multicast over TCP/IP HOWTO*

  Updated: Mar 1998. Tries to cover most aspects related to multicast over TCP/IP networks.
- Multi-Distro-Dev, *Development for Multiple Linux Distributions mini-HOWTO*

  Updated: Aug 2002. Outlines a quick hack to aid in developing and testing user-space programs for multiple Linux distributions.
- MultiOS-HOWTO, *Managing Multiple Operating Systems HOWTO*

Updated: Feb 2000. Covers the procedures for using removable hard disks to install and manage multiple alternative operating systems while leaving a single fixed disk to permanently house and protect the primary operating system.

- Mutt-GnuPG-PGP-HOWTO, *Mutt-i, GnuPG and PGP HOWTO*

Updated: Feb 2000. Briefly explains how to configure Mutt-i, PGP and GnuPG in its different versions (2.6.x, 5.x and GnuPG).

- NC-HOWTO, *Linux Netstation HOWTO*

Updated: Mar 2004. Describes how to hook up a IBM Netstation to your local network using a Linux box as server.

- NCD-HOWTO, *Linux NCD mini-HOWTO*

Updated: Dec 2001. Describes how to hook up a NCD ThinSTAR to your local network using a Linux box as server.

- NCD-X-Terminal, *NCD X terminal mini HOWTO*

Updated: Mar 2000. How to connect an NCD X terminal to a UNIX host.

- NCURSES-Programming-HOWTO, *NCURSES Programming HOWTO*

Updated: Jun 2005. An "All in One" guide for programming with ncurses and its sister libraries.

- NET3-4-HOWTO, *Linux Networking HOWTO*

Updated: Aug 1999. Aims to describe how to install and configure the Linux networking software and associated tools.

- NetMeeting-HOWTO, *Linux NETMEETING HOWTO*

Updated: Jan 2002. Describes how to make Microsoft NetMeeting interoperate with Linux.

- Netrom-Node, *Netrom-Node mini-Howto*

Updated: Oct 1998. How to setup the ax25-utilities package for Amateur Radio such that it makes Netrom Nodes for the Node program and the BBS software from John-Paul Roubelat, F6FBB.

- Netscape+Proxy, *HOWTO for inHouse IntraNet*

Updated: Aug 1997. Describes the procedure to set up a NETWORK (INTRANET) at your home. Then we shall setup the network such that NETSCAPE Clients can be used on ANY machine to access the internet. . .

- Network-boot-HOWTO, *Network boot and exotic root HOWTO*

Updated: Apr 2002. Explains how to quickly setup a linux server to provide what diskless linux clients require to get up and running, using an IP network.

- Network-Install-HOWTO, *Network Install HOWTO*

Updated: Sep 2002. Describes how to install Linux over a Local Area Network (LAN).

- Networking-Overview-HOWTO, *The Linux Networking Overview HOWTO*

Updated: Jul 2000. Overview of the networking capabilities of the Linux Operating System; provides pointers for further information and implementation details.

- News-Leafsite, *News Leafsite mini-HOWTO*

Updated: Dec 2001. This will help you to configure a small leafsite for Usenet News using the free software package Leafnode.

- NFS-HOWTO, *NFS HOWTO*

Updated: Aug 2002. How to set up NFS clients and servers.

- NFS-Root, *NFS-Root mini-HOWTO*

Updated: Sep 2002. How to setup a ``disc-less'' Linux workstation, which mounts it's root filesystems via NFS.

- NFS-Root-Client-mini-HOWTO, *NFS-Root-Client Mini-HOWTO*

Updated: Feb 1999. How to create client root directories on a server that is using NFS Root mounted clients.

- NIS-HOWTO, *The Linux NIS(YP)/NYS/NIS+ HOWTO*

Updated: Jul 2003. How to configure Linux as NIS(YP) or NIS+ client and how to install as a NIS server.

- NLM-HOWTO, *NetWare Loadable Module Programming HOWTO*

Updated: Jan 2007. How to develop NetWare Loadable Modules under Linux, using GNU CC and nlmconv(1) from GNU binutils.

- Nvidia-OpenGL-Configuration, *Nvidia OpenGL Configuration mini-HOWTO*

Updated: Jan 2002. How to install the OpenGL drivers for Nvidia graphics cards on Linux. Also explains how to install XFree86, the OpenGL Utility library (part of Mesa), the OpenGL Utility Toolkit (glut), etc.

- Offline-Mailing, *Linux off-line mailing method*

Updated: Jun 1998. Use your linux mailing system offline, receive mail for multiple users with only one email address, and without being 24-24 online.

- OLSR-IPv6-HOWTO, *Linux Optimized Link State Routing Protocol (OLSR) IPv6 HOWTO*

Updated: Apr 2004. Describes the software and procedures to set up and use Optimized Link State Routing Protocol (OLSR) with IPv6 for Linux. OLSR is used as a routing protocol for Mobile Ad-Hoc Networks.

- Online-Troubleshooting-HOWTO, *Online Troubleshooting Resources HOWTO*

Updated: May 2006. Directs Linux users to resources available on the Internet that provide access to a vast amount of Linux-related information useful in troubleshooting problems.

- openMosix-HOWTO, *The openMosix HOWTO*

Updated: Jun 2004. A brief description to openMosix, a software package that turns a network of GNU/Linux computers into a computer cluster.

- Optical-Disk-HOWTO, *Linux Optical Disk HOWTO*

Updated: May 2003. Describes the installation and configuration of optical disk drives for Linux.

- Oracle-7-HOWTO, *Oracle 7 Database HOWTO*

Updated: Aug 1998. A guide to installing and configuring the Oracle 7 Database Server on a Linux system.

- Oracle8-on-RH7X-HOWTO, *Oracle 8i on Linux RH7.X Installation HOWTO*

Updated: Jul 2002. Following this HOWTO you should be able to get "Oracle 8i, version 8.1.7, Enterprise Edition for Linux" installed on a RedHat 7.X distribution.

- Oracle-9i-Fedora-3-Install-HOWTO, *Oracle 9i under Fedora Core 3 - Installation HOWTO*

Updated: Jun 2005. Describes how to install Oracle 9i on Fedora Core 3 or greater.

- Oracle-9i-RH8-and-RH9-HOWTO, *Oracle 9i under RedHat Linux 8.x and 9.x - Simple Installation HOWTO*

Updated: Jun 2003. Describes an example of an Oracle 9i Standard Edition database installation under RedHat Linux 8.x and 9.x.

- Outlook-to-Unix-Mailbox, *MS Outlook to Unix Mailbox Conversion mini HOWTO*

Updated: Jan 2004. Covers conversion of old email in Microsoft Outlook (not Outlook Express!) to typical Unix file formats.

- PA-RISC-Linux-Boot-HOWTO, *PA-RISC/Linux Boot HOWTO*

Updated: Jun 2006. Outlines the procedures for getting the current PA-RISC/Linux development kernel to boot on your PA-RISC system. It also explains the functions of PALO, the kernel loader for PA/Linux.

- Pager, *The Linux Alphanumeric Pager Gateway Mini-HOWTO*

Updated: Jul 2001. Discusses the compilation and installation of e-mail to Pager gateway.

- PalmOS-HOWTO, *Palm OS Desktop HOWTO*

Updated: Mar 2002. Explains how to use your Palm OS device with a Linux system.

- Parallel-Processing-HOWTO, *Linux Parallel Processing HOWTO*

Updated: Jun 2004. Discusses the four basic approaches to parallel processing that are available to Linux users: SMP Linux systems, clusters of networked Linux systems, parallel execution using multimedia instructions (i.e., MMX), and attached (parallel) processors hosted by a Linux system.

- Partition, *Linux Partition HOWTO*

Updated: Dec 2005. Teaches you how to plan and layout disk space for your Linux system.

- Partition-Mass-Storage-Definitions-Naming-HOWTO, *Partitions-Mass-Storage-Definitions-Naming-HOWTO*

Updated: May 2009.

- Partition-Mass-Storage-Dummies-Linux-HOWTO, *Partition-Mass-Storage-Dummies-Linux-HOWTO*

Updated: Apr 2009. A document about partitioning usual mass storage that can be magnetic rotating hard drives or Solid State Drives (SSD - including flash cards or USB keys).

- Partition-Rescue, *Partition Rescue HOWTO*

Updated: Nov 2008. Describes how to rescue your Linux partition if it has been deleted.

- Path, *PATH HOWTO*

Updated: Nov 1997. Describes common tricks and problems with Unix / Linux environment variables, especially with PATH variable.

- PCI-HOWTO, *Linux PCI-HOWTO*

Updated: Jun 2001. Information on what works with Linux and PCI-boards and what does not.

- PCMCIA-HOWTO, *Linux PCMCIA HOWTO*

  Updated: Dec 2003. How to install and use PCMCIA Card Services for Linux.
- PCTel-MicroModem-Config, *PCTel HSP MicroModem Configuration mini-HOWTO*

  Updated: Dec 2002. Make your PCTel HSP MicroModem work in Linux.
- phhttpd-HOWTO, *PHHTTPD*

  Updated: Apr 2001. phhttpd is an HTTP accelerator. It serves fast static HTTP fetches from a local file-system and passes slower dynamic requests back to a waiting server.
- PHP-HOWTO, *PHP HOWTO*

  Removed: October 2002. This HOWTO has been removed for review. Please visit the official PHP site for information on this topic.
- PHP-Nuke-HOWTO, *PHP-Nuke: Management and Programming*

  Updated: May 2003. A definitive document on PHP-Nuke (Content Managment System).
- Pine-Exchange, *Pine-Exchange mini-HOWTO*

  Updated: Mar 2002. Documents the configuration of the Pine email client to be used with a Microsoft Exchange Server.
- PLIP, *LINUX PLIP mini-HOWTO*

  Updated: Mar 1998. Will hopefully let you build and use a Parallel Line Interface Protocol.
- PLIP-Install-HOWTO, *PLIP Install HOWTO*

  Updated: Jul 2002. How to install a Gnu/Linux distribution on a computer without Ethernet card, nor cdrom, but just a local floppy drive and a remote nfs server attached by a Null-Modem parallel cable.
- Plug-and-Play-HOWTO, *The Linux Plug-and-Play HOWTO*

  Updated: Aug 2007. How to get your Linux system to support Plug-and-Play.
- Polish-HOWTO, *Polish HOWTO*

  Updated: Feb 1999. Addresses Linux localization issues specific to Polish users (written in Polish).
- PortSlave, *PortSlave How-To using the Linux Router*

  Updated: Oct 2000. A beginning document for using Portslave with the Linux router.
- Portuguese-HOWTO, *Portuguese HOWTO*

  Updated: Dec 1999. Addresses Linux localization issues specific to Portuguese users (written in Portuguese).
- Postfix-Cyrus-Web-cyradm-HOWTO, *Postfix-Cyrus-Web-cyradm-HOWTO*

  Updated: Mar 2004. Guides you through the installation of the Postfix mail transportation agent (MTA), the Cyrus IMAP server.
- PostgreSQL-HOWTO, *Database-SQL-RDBMS HOWTO for Linux*

  Removed: Jan 2002. This HOWTO has been removed for review. Please visit the official PostgreSQL site for information on this topic.
- PPP-HOWTO, *Linux PPP HOWTO*

Updated: Jul 2000. How to connect your Linux PC to a PPP server, how to use PPP to link two LANs together; provides one method of setting up your Linux computer as a PPP server. The document also provides help in debugging non-functional PPP connections.

- ppp-ssh, *VPN PPP-SSH Mini-HOWTO*

Updated: Jan 2002. A PPP-SSH VPN is probably the easiest type of VPN to set up. It uses nothing more than the very common PPP and SSH utilities to form an encrypted network tunnel between two hosts.

- Pre-Installation-Checklist, *GNU/Linux Pre-Installation Checklist*

Updated: Nov 2000. An aide-memoire which may make installation of Linux a pleasant experience for you.

- Post-Installation-Checklist, *GNU/Linux Post-Installation Checklist*

Updated: Jun 2001. Provides a checklist for steps you should take immediately after installing GNU/Linux.

- Printing-HOWTO, *The Linux Printing HOWTO*

Updated: Jun 2003. A collection of information on how to generate, preview, print and fax anything under Linux (and other Unices in general).

- Printing-Usage-HOWTO, *The Linux Printing Usage HOWTO*

Updated: Feb 1998. How to use the print system under Linux.

- Print2Win, *The Linux Print2Win mini-HOWTO*

Updated: Jul 2002. Contains the general configuration to get linux printing to a Windows print share.

- Process-Accounting, *Enabling Process Accounting on Linux*

Updated: Feb 2001. Describes the basics of enabling process accounting on Linux.

- Programming-Languages, *Programming Languages mini-HOWTO*

Updated: Jul 2000. A brief comparison of major programming languages for Linux and major libraries for creating graphical user interfaces (GUIs) under Linux.

- Program-Library-HOWTO, *Program Library HOWTO*

Updated: Apr 2003. This HOWTO for programmers discusses how to create and use program libraries on Linux. This includes static libraries, shared libraries, and dynamically loaded libraries.

- Proxy-ARP-Subnet, *ProxyARP Subnetting HOWTO*

Updated: Aug 2000. Discusses using Proxy Address Resolution Protocol (ARP) with subnetting in order to make a small network of machines visible on another Internet Protocol (IP) subnet.

- Psion-HOWTO, *Linux and Psion HOWTO*

Updated: Nov 2000. How to use Psion palmtops with Linux. Does not cover running Linux on a Psion palmtop.

- Public-Web-Browser, *Linux web browser station*

Updated: Oct 2000. Describes the setup of Internet kiosk-type system based on Linux to be deployed to provide public Internet/webmail access.

- Querying-libiptc-HOWTO, *Querying libiptc HOWTO*

Updated: Apr 2002. Explains how to use the libiptc library included in the iptables package and how to use programs to query the internal structures.

- Qmail-ClamAV-HOWTO, *Qmail-Scanner and ClamAV HOWTO*

Updated: Sep 2004. Describes how to integrate ClamAV, an anti-virus attachment scanner and Qmail-Scanner, an anti-virus message content scanner, with an existing installation of a qmail email server.

- Qmail+MH, *mini-HOWTO install qmail with MH*

Updated: Mar 1998. Installation experiences to offer some help to other users who wish to use this combination for their email.

- Qmail-VMailMgr-Courier-imap-HOWTO, *Qmail VMailMgr and Courier-Imap HOWTO*

Updated: Mar 2002. Building a mail server that will support virtual domain hosting and provide smtp, pop3 and imap services, using a powerful alternative to sendmail.

- Quake-HOWTO, *Linux Quake HOWTO*

Updated: Mar 2010. How to install, run and troubleshoot Quake, QuakeWorld and Quake II on an Intel Linux system.

- Quota, *Quota mini-HOWTO*

Updated: Aug 2003. How to enable file system quota on a Linux host, assigning quota for users and groups, as well as the usage of miscellaneous quota commands.

- RCS, *The RCS mini-HOWTO*

Updated: Aug 1997. Covers basic installation and usage of RCS, the GNU Revision Control System, under Linux.

- Reading-List-HOWTO, *The Linux Reading List HOWTO*

Updated: Feb 2004. Lists the books the author thinks are most valuable to a person trying to learn Unix (especially Linux) top to bottom.

- RedHat-CD-HOWTO, *Burning a RedHat CD HOWTO*

Updated: Oct 2003. How to make your own CDs from the Red Hat Linux distribution equivalent to the ones commercially available from Red Hat.

- Reliance-HOWTO, *Reliance LG LSP 340 Series WLL Modem Setup HOWTO*

Updated: Jun 2005. This document explains how to set up and configure Reliance or TATA Indicomm WLL phones on Linux, using a serial cable instead of the (default) USB cable. It also has instructions on how to build the cable yourself.

- Remote-Boot, *Linux Remote-Boot mini-HOWTO: Configuring Remote-Boot Workstations with Linux, DOS, Windows 95/98 and Windows NT*

Updated: Feb 1999. How to set up a very robust and secure server-based configuration for a cluster of PCs, allowing each client to choose at boot-time which operating system to run.

- Remote-Bridging, *Remote Bridging with IP Tunnels mini-HOWTO*

Updated: May 2002. Describes how to unite two separate ethernet LANs with an IP tunnel between them.

- Remote-Serial-Console-HOWTO, *Remote Serial Console HOWTO*

Updated: Mar 2003. Covers how to set up your hardware to use a serial console.

- Remote-X-Apps, *Remote X Apps mini-HOWTO*

Updated: Dec 2001. How to run remote X applications.

- Root-RAID-HOWTO, *Root RAID HOWTO cookbook*

Updated: Jul 2000. This document only applies to the OLD raidtools, versions 0.50 and under. The workarounds and solutions addressed in this HOWTO have largely been made obsolete by the vast improvment in the 0.90 raidtools and accompanying kernel patch to the 2.0.37, 2.2x and 2.3x series kernels. You may find the detailed descriptions useful, particularly if you plan to run root raid or use initrd.

original description: A cookbook for creating a root mounted raid filesystem and companion fallback rescue system using linux initrd. Step-by-step instructions for both raid1 and raid5 md0 devices.

- RPM-HOWTO, *RPM HOWTO - RPM at Idle*

Updated: Nov 1999. RPM is the RPM Package Manager. It is an open packaging system available for anyone to use. It allows users to take source code for new software and package it into source and binary form such that binaries can be easily installed and tracked and source can be rebuilt easily. It also maintains a database of all packages and their files that can be used for verifying packages and querying for information about files and/or packages.

- RPM-for-Unix-HOWTO, *RPM-for-Unix HOW-TO*

Removed: November 2003. This HOWTO has been removed for review.

- RTLinux-HOWTO, *RTLinux HOWTO*

Updated: Aug 2002. RTLinux Installation and writing realtime programs in Linux.

- Samba-Authenticated-Gateway-HOWTO, *Samba Authenticated Gateway HOWTO*

Updated: Jan 2005. How to build a Firewall/Gateway with rules set on user basis having the users authenticated by a Samba Primary Domain Controller.

- Sat-HOWTO, *Sat (Satellite Technology) HOWTO*

Updated: Jul 2002. Investigates "State of Art" Sat connections in a Linux environment; how to get them faster and how to share them with many clients.

- Saving-Space, *Saving Space mini-HOWTO*

Updated: Apr 1999. Directions for squeezing your Linux installation into the least possible space. Particularly aimed at notebook users.

- Scanner-HOWTO, *The Scanner HOWTO*

Updated: May 2004. Documents the steps necessary for access and use of a photographic scanner device on a system running Linux.

- Scientific-Computing-with-GNU-Linux, *Scientific Computing with Free GNU/Linux Software HOWTO*

Updated: Oct 2004. Aims to show how a PC running GNU/Linux can be used for scientific computing. It lists the various available free software and also links on the world wide web to tutorials on getting started with the tools.

- Scripting-GUI-TclTk, *Scripting Graphical Commands with Tcl/Tk Mini-HOWTO*

Updated: Aug 2003. This article provides an introduction to building graphical user interface frontends for command-line utilities using Tcl and the Tk toolkit.

- SCSI-2.4-HOWTO, *The Linux 2.4 SCSI subsystem HOWTO*

  Updated: Aug 2004. Describes the SCSI subsystem as the Linux kernel enters the 2.4 production series. An external view of the SCSI subsystem is the main theme. Material is included to help the system administration of the Linux SCSI subsystem.
- SCSI-Generic-HOWTO, *The Linux SCSI Generic (sg) HOWTO*

  Updated: May 2002. Describes the SCSI Generic driver (sg) found in the Linux 2.4 production series of kernels. Focuses on the interface and characteristics of the driver that application writers may need to know.
- Secure-BootCD-VPN-HOWTO, *Secure Boot CDs for VPN HOWTO*

  Updated: May 2007. Describes the creation of live boot CDs used to make secure VPN connections from anywhere (over the Internet) to internal networks that have firewall exposure to the Internet.
- Secure-CVS-Pserver, *Secure CVS Pserver Mini-HOWTO*

  Updated: Mar 2003. Will help you set up a more secure CVS Pserver for anonymous CVS access.
- Secure-POP+SSH, *Secure POP via SSH mini-HOWTO*

  Updated: Sep 1998. How to set up secure POP connections using ssh.
- Secure-Programs-HOWTO, *Secure Programming for Linux and Unix HOWTO*

  Updated: Mar 2003. Provides a set of design and implementation guidelines for writing secure programs for Linux and Unix systems.
- Security-HOWTO, *Linux Security HOWTO*

  Updated: Jan 2004. A general overview of security issues that face the administrator of Linux systems.
- Security-Quickstart-HOWTO, *Security Quick-Start HOWTO for Linux*

  Updated: Jul 2002. An overview of the basic steps required to secure a Linux installation from intrusion.
- Security-Quickstart-Redhat-HOWTO, *Security Quick-Start HOWTO for Redhat Linux*

  Updated: Jul 2002. An overview of the basic steps required to secure a Linux installation from intrusion (*Redhat specific version*).
- Sendmail-Address-Rewrite, *sendmail address rewriting mini-HOWTO*

  Updated: May 1998. A brief description of how to set up sendmail's configuration file for the home user's dial-up access.
- Sendmail+UUCP, *Sendmail+UUCP HOWTO*

  Updated: May 1998. How to setup a single machine with no direct access to the internet to route mail for you via sendmail and UUCP to a 'smarter host' (eg. your ISP).
- Sentry-Firewall-CD-HOWTO, *Sentry Firewall CD HOWTO*

  Updated: Aug 2003. An introduction on how the Sentry Firewall CDROM works and how to get started using the system.
- Serbian-HOWTO, *Serbian HOWTO*

Updated: Nov 1998. Addresses Linux localization issues specific to Serbian users (written in Serbian).

- Serial-HOWTO, *Serial HOWTO*

Updated: Feb 2011. Describes serial port features other than those which should be covered by other HOWTOs. Lists information on multiport serial cards and contains detailed technical information about the serial port itself.

- Serial-Laplink-HOWTO, *Serial Laplink HOWTO*

Updated: Jul 2001. Details how to setup a "laplink" connection between two computers.

- Serial-Programming-HOWTO, *Serial Programming HOWTO*

Updated: Aug 2001. How to program communications with devices over a serial port on a Linux box.

- Shadow-Password-HOWTO, *Linux Shadow Password HOWTO*

Updated: Apr 1996. How to obtain, install, and configure the Linux password Shadow Suite.

- SLIP-PPP-Emulator, *SLIP/PPP Emulator mini-HOWTO*

Updated: Feb 2001. Describes how to get your Linux box to connect to a generic site via a SLIP/PPP emulator, such as SLiRP or TIA.

- Slovak-HOWTO, *Slovak HOWTO*

Updated: Feb 2002. Addresses Linux localization issues specific to Slovakian users (written in Slovak).

- Slovenian-HOWTO, *Slovenian HOWTO*

Updated: Feb 1999. Addresses Linux localization issues specific to Slovenian users (written in Slovenian).

- Small-Memory, *Small Memory Mini-HOWTO*

Updated: Dec 2000. How to run Linux on a system with a small amount of memory.

- Smart-Card-HOWTO, *Smart Card HOWTO*

Updated: Sep 2001. Information on smart card technology and its applications in Linux environment.

- SMB-HOWTO, *SMB HOWTO*

Updated: Apr 2000. How to use the Server Message Block (SMB) protocol, also called the Session Message Block, NetBIOS or LanManager protocol, with Linux using Samba.

- SMP-HOWTO, *Linux SMP HOWTO*

Updated: Jul 2002. Reviews main issues related to SMP configuration under Linux.

- Software-Building-HOWTO, *Building and Installing Software Packages for Linux*

Updated: Jul 1999. A comprehensive guide to building and installing "generic" UNIX software distributions under Linux.

- Software-Proj-Mgmt-HOWTO, *Free Software Project Management HOWTO*

Updated: Apr 2002. A guide to the non-technical aspects of free software project the non-technical aspects of free software project management; and was written to be a crash course in the people skills that aren't taught to commercial coders but that can make or break a free software project.

- Software-RAID-HOWTO, *Software-RAID HOWTO*

Updated: Mar 2010. This HOWTO is deprecated; the Linux RAID HOWTO is maintained as a wiki by the linux-raid community at http://raid.wiki.kernel.org/ How to use Software RAID under Linux. It addresses a specific version of the Software RAID layer, namely the 0.90 RAID layer made by Ingo Molnar and others. This is the RAID layer that will be standard in Linux-2.4, and it is the version that is also used by Linux-2.2 kernels shipped from some vendors. The 0.90 RAID support is available as patches to Linux-2.0 and Linux-2.2, and is by many considered far more stable that the older RAID support already in those kernels.

- Software-RAID-0.4x-HOWTO, *Software-RAID HOWTO (earlier implementation)*

  Updated: Nov 1998. How to use Software RAID under Linux. RAID stands for "Redundant Array of Inexpensive Disks". For users of the Linux MD kernel extension, the associated tools, and their use. This HOWTO addresses an earlier implementation.
- Software-Release-Practice-HOWTO, *Software Release Practice HOWTO*

  Updated: Jan 2013. Describes good release practices for Linux open-source projects.
- Sound-HOWTO, *The Linux Sound HOWTO*

  Updated: Jul 2001. Describes sound support for Linux (hardware, configuration, etc).
- Soundblaster-AWE, *Sound Blaster AWE 32/64 HOWTO*

  Updated: Jan 1998. How to install and configure a Sound Blaster 32 (SB AWE 32, SB AWE 64) card from Creative Labs in a Linux System using the AWE Sound Driver Extension written by Takashi Iwai.
- Sound-Playing-HOWTO, *The Linux Sound Playing HOWTO*

  Updated: Aug 1998. Lists applications for Linux that play various sound formats.
- Spam-Filtering-for-MX, *Spam Filtering for Mail Exchangers*

  Updated: Sep 2004. How to reject junk mail in incoming SMTP transactions.
- Spanish-HOWTO, *Spanish Linux HOWTO*

  Updated: Aug 1996. Contains information on Linux in the Spanish environment, for developing software with Spanish support or how to get in touch with the Linux community in Spain (written in Spanish).
- SPARC-HOWTO, *SPARC-HOWTO*

  Updated: Aug 2004. Describes Linux on SPARC-based workstations.
- Speech-Recognition-HOWTO, *Speech Recognition HOWTO*

  Updated: Apr 2002. Automatic Speech Recognition (ASR) on Linux is becoming easier. Several packages are available for users as well as developers. This document describes the basics of speech recognition and describes some of the available software.
- SquashFS-HOWTO, *SquashFS HOWTO*

  Updated: Jul 2008. Describes the usage of SquashFS - a highly-compressed file system for Linux, which is intended for use in tiny/embedded Linux systems, as well as for read-only archiving and general in-file system compression.
- SRM-HOWTO, *SRM Firmware HOWTO*

  Updated: Nov 2000. Describes how to boot Linux/Alpha using the SRM console, which is the console firmware also used to boot Compaq Tru64 Unix (also known as Digital Unix and OSF/1) and

OpenVMS.

- SSL-Certificates-HOWTO, *SSL Certificates HOWTO*

  Updated: Oct 2002. How to manage a certificate authority (CA), and issue or sign certificates to be used for secure web, secure e-mail, or signing code and other usages.
- SSL-RedHat-HOWTO, *Building a Secure RedHat Apache Server HOWTO*

  Updated: Feb 2001. Explains how PKI and SSL work together. It is essential to understand how the SSL protocol works to successfully deploy a secure server.
- StarOffice, *StarOffice 3.1 Mini-HOWTO*

  Updated: Nov 1999. Information on installing the StarOffice 3.1 Office Suite by StarDivision.
- Swap-Space, *Linux Swap Space Mini-HOWTO*

  Updated: Dec 2002. How to share your Linux swap partition with Windows.
- Sybase-ASA-HOWTO, *Sybase Adaptive Server Anywhere for Linux HOWTO*

  Updated: Apr 2001. Guides you through the installation of SQL Anywhere Studio 7.0.2 for Linux and the basic operation and administration of Adaptive Server Anywhere databases.
- Sybase-ASE-HOWTO, *Sybase Adaptive Server Enterprise / SQL Server HOWTO*

  Updated: Sep 2003. Describes installation and configuration of Sybase Adaptive Server Enterprise (formerly known as SQL Server) relational database server on the Linux platform, together with basic usage.
- Sybase-PHP-Apache, *Sybase-PHP-Apache mini-HOWTO*

  Updated: Jul 2001. Explains how to set up a Linux machine to run an Apache web server using PHP to access a Sybase-ASE database.
- Tamil-Linux-HOWTO, *Tamil Linux HOWTO*

  Updated: Feb 2003. Helps you to set up a working Tamil Linux environment. It describes setting up fonts, keyboard drivers, editing and printing Tamil/bilingual documents, and working with the X Window system.
- Tango-HOWTO, *Tango 2000 HOWTO*

  Updated: Jul 2000. Describes the installation, configuration, and basic troubleshooting of Pervasive Software's Tango Application Server on Sun Solaris and various flavours of Linux.
- TclTk-HOWTO, *The Linux Tcl and Tk HOWTO*

  Updated: Nov 1998. Describes the Linux approach to Tcl, a scripting language.
- TCP-Keepalive-HOWTO, *TCP Keepalive HOWTO*

  Updated: May 2007. Describes the TCP keepalive implementation in the linux kernel, introduces the overall concept and points to both system configuration and software development.
- TeTeX-HOWTO, *The teTeX HOWTO: The Linux-teTeX Local Guide*

  Updated: Nov 1998. Covers the basic installation and usage of the teTeX TeX and LaTeX implementation, plus auxiliary packages like Ghostscript.
- Text-Terminal-HOWTO, *Text-Terminal HOWTO*

Updated: Mar 2013. Explains what text terminals are, how they work, how to install and configure them, and provides some info on how to repair them.

- Thai-HOWTO, *The Linux Thai HOWTO*

  Updated: Aug 1998. How to use Thai language with Linux. This will cover setting Thai fonts, Thai keyboard and some Thai applications.
- Thinclient-HOWTO, *Thin Client: New User Guide*

  Updated: Nov 1999. How to turn inexpensive legacy computers into fast terminals.
- TimePrecision-HOWTO, *Managing Accurate Date and Time HOWTO*

  Updated: Nov 2005. Explains the time mechanisms on Linux, what are time zones, and precision with NTP.
- TimeSys-Linux-Install-HOWTO, *TimeSys Linux Install HOWTO*

  Updated: May 2005. A quick-start guide for installing TimeSys Linux on a typical desktop workstation.
- Tips-HOWTO, *The Linux Tips HOWTO*

  Updated: Jun 1998. Contains those hard to find hints and tweekings that make Linux a bit nicer.
- TkRat, *TkRat mini-HOWTO*

  Updated: Sep 1999. Geared toward anyone interested in using their Linux computer to send and receive Internet E-Mail.
- Token-Ring, *Token-Ring mini-HOWTO*

  Updated: Jan 2002. Designed to help you get up and running using a Token Ring adaptor to access the network.
- Traffic-Control-HOWTO, *Traffic Control HOWTO*

  Updated: Oct 2006. Traffic control encompasses the sets of mechanisms and operations by which packets are queued for transmission/reception on a network interface. This HOWTO provides an introduction and overview of the capabilities and implementation of traffic control under Linux.
- Traffic-Control-tcng-HTB-HOWTO, *Traffic Control using tcng and HTB HOWTO*

  Updated: Oct 2006. A brief tutorial on using tcng (Traffic Control Next Generation) with HTB (Hierarchical Token Bucket) to perform traffic shaping on a Linux machine.
- TransparentProxy, *Transparent Proxy with Squid mini-HOWTO*

  Updated: Aug 2002. Provides information on how to setup a transparent caching HTTP proxy server using only Linux and squid.
- TT-Debian, *TrueType Fonts in Debian mini-HOWTO*

  Updated: Jan 2000. How to configure a Debian system to use TrueType fonts for display and printing.
- TT-XFree86, *TrueType Fonts with XFree86 4.0.x mini-HOWTO*

  Updated: Jun 2004. Describes how to use TrueType (*.ttf) fonts with XFree86 4.0.x.
- Turkish-HOWTO, *Turkish HOWTO*

  Updated: Sep 1999. Addresses Linux localization issues specific to Turkish users (written in Turkish).

- UMSDOS-HOWTO, *UMSDOS HOWTO*

  Updated: Dec 2001. Explains how to use Umsdos (a linux file system) in different configurations, and its operation.
- Unicode-HOWTO, *The Unicode HOWTO*

  Updated: Jan 2001. How to change your Linux system so it uses UTF-8 as text encoding.
- Unix-and-Internet-Fundamentals-HOWTO, *The Unix and Internet Fundamentals HOWTO*

  Updated: Aug 2013. Describes the working basics of PC-class computers, Unix-like operating systems, and the Internet in non-technical language.
- Unix-Hardware-Buyer-HOWTO, *The Unix Hardware Buyer HOWTO*

  Updated: Apr 2010. This is your one-stop resource for information about how to buy and configure Intel hardware for cheap, powerful Unix systems.
- Update, *The Staying Updated mini-HOWTO*

  Updated: May 2002. How to stay updated and abreast of the development that takes place in the Linux world of development.
- Upgrade, *Upgrading Your Linux Distribution mini-HOWTO*

  Updated: Mar 2002. Hints and tips on upgrading from one linux distribution to another.
- UPS-HOWTO, *UPS HOWTO*

  Updated: May 2007. Teaches you things you need to know to select a UPS (Uninterruptible Power Supply) intelligently and make it work with your open-source operating system.
- Usenet-News-HOWTO, *Usenet News HOWTO*

  Updated: Aug 2002. A complete HOWTO on Usenet news.
- User-Authentication-HOWTO, *User Authentication HOWTO*

  Updated: Feb 2003. Explains how user and group information is stored and how users are authenticated on a Linux system (PAM), and how to secure you system's user authentication.
- User-Group-HOWTO, *Linux User Group HOWTO*

  Updated: Jul 2013. A guide to founding, maintaining, and growing a Linux User Group.
- UUCP-HOWTO, *The Linux UUCP HOWTO*

  Updated: Dec 2001. Describes the setup, care & feeding of UUCP under Linux.
- VAIO+Linux, *Linux on Sony VAIO mini-HOWTO*

  Updated: Sep 1998. This document explains installation of Linux on Sony VAIO computers.
- Valgrind-HOWTO, *Valgrind HOWTO*

  Updated: Sep 2002. A guide to Valgrind, the malloc debugger.
- VAR-HOWTO, *Linux VAR HOWTO*

  Updated: Aug 1999. Contains a listing of service companies which do not manufacture hardware or create packaged software, but add value to existing products.
- VB6-to-Tcl, *VB6 To Tcl mini-HOWTO*

Updated: Apr 2003. A 15 Minute Tcl Tour For Visual Basic and VBScript Programmers.

- VCR-HOWTO, *VCR-HOWTO - Using your GNU/Linux computer as a VCR*

Updated: Jul 2001. A guide to setting up your GNU/Linux workstation as a digital VCR using the video4linux driver and a supported tuner card.

- VideoLAN-HOWTO, *VideoLAN HOWTO*

Updated: Sep 2003. Describes how to use the complete VideoLAN streaming solution.

- Vim-HOWTO, *Vim Color Editor HOWTO (Vi Improved w/syntax color highlighting)*

Removed: November 2003. This HOWTO has been removed for review.

- Virtual-Services-HOWTO, *Virtual Services HOWTO*

Updated: Aug 1998. How to virtualize a service.

- Virtual-Web, *Virtual Web mini-HOWTO*

Updated: Jun 2001. Discuss the essentials of setting up a Virtual Web Site under Linux.

- Visual-Bell, *Visible bell mini-Howto*

Updated: Dec 2001. How to use termcap to configure a visual bell on one's system and describes how to disable audible bells on demand.

- VMailMgr-HOWTO, *VMailMgr HOWTO*

Updated: Apr 2000. Explains how to setup VMailMgr to support pop3 virtual domain services in conjunction with Qmail.

- VME-HOWTO, *VME HOWTO*

Updated: Feb 2002. Shows the embedded system community how to run Linux on their VMEbus Pentium and other PCI local bus based VMEbus processor designs.

- VMS-to-Linux-HOWTO, *From VMS to Linux HOWTO*

Updated: Sep 2004. Aimed at all those who have been using VMS and now need or want to switch to Linux.

- VoIP-HOWTO, *VoIP Howto*

Updated: Aug 2002. Voice Over IP is a new communication means that let you telephone with Internet at almost null cost. This document covers how this is done.

- VPN-HOWTO, *VPN HOWTO*

Updated: May 2002. How to set up a Virtual Private Network with Linux.

- VPN-Masquerade-HOWTO, *Linux VPN Masquerade HOWTO*

Updated: Oct 2000. How to configure a Linux firewall to masquerade IPsec- and PPTP-based Virtual Private Network traffic, allowing you to establish a VPN connection without losing the security and flexibility of your Linux firewall's internet connection and allowing you to make available a VPN server that does not have a registered internet IP address.

- Wacom-Tablet-HOWTO, *Wacom Tablet HOWTO*

Updated: Aug 2001. Installation of (not only) Wacom graphic tablets under linux and/or xfree86.

- Wacom-USB-mini-HOWTO, *Wacom Graphire USB Mini-HOWTO*

Updated: Jun 2000. How to setup a Wacom Graphire USB tablet for use with Linux.

- Wearable-HOWTO, *Wearable HOWTO*

  Updated: Nov 2000. Nomadism is one of the major trends of our society, now most of the people can work with a laptop computer, but few did the next step: to live, or if you prefer to wear one computer - that is a wearable.
- Web-Browsing-Behind-ISA-Server-HOWTO, *Web Browsing Behind ISA Server HOWTO*

  Updated: May 2003. If you are using a Linux box connected to a Windows-based ISA server, this article will help you in set things up so you can browse the web from your Linux machine.
- Webcam-HOWTO, *The Webcam HOWTO*

  Updated: Feb 2005. Assists the reader in the steps necessary to configure and use a webcam within the Linux operating system.
- WikiText-HOWTO, *LDP WikiText Editing HOWTO*

  Updated: Jan 2002. Explains how to use the LDP WikiText editing format to create DocBook documents for the LDP.
- Windows-LAN-Server-HOWTO, *Windows LAN server HOW-TO*

  Updated: Oct 2004. Intended to assist those who wish to consider Linux as a server within an office environment which has PC's primarily running Microsoft Windows 9x.
- Windows-Newsreaders-under-Linux-HOWTO, *Windows Newsreaders under Linux HOWTO*

  Updated: Feb 2004. Describes how to set up and use several different Windows Usenet newsreaders under the Linux operating system using the Wine "emulator."
- Winmodems-and-Linux-HOWTO, *Winmodems-and-Linux HOWTO*

  Updated: Apr 2001. Helps users get a Winmodem working under Linux.
- Wireless-HOWTO, *Wireless HOWTO for Linux Systems*

  Updated: Jul 2002. Document explains how to setup Wireless in Linux, compatibility problems, something about geographic requirements and more.
- Wireless-Link-sys-WPC11, *Link-sys WPC11 Mini-HOWTO*

  Updated: Jun 2004. How to set up a Wireless Link-Sys WPC11 card using a Link-SYS Wireless Access Point/DSL/Switch on a Debian system.
- Wireless-Sync-HOWTO, *Wireless Sync HOWTO*

  Updated: Mar 2002. Explains how to perform a wireless, network sync between a Handspring Visor and jpilot or jpilot-sync.
- WordPerfect, *WordPerfect Mini-howto*

  Updated: Aug 1997. Discusses running WordPerfect on Linux, including a brief discussion on the WordPerfect 7.0 beta.
- WWW-mSQL-HOWTO, *A mSQL and perl Web Server HOWTO*

  Updated: Sep 1997. How to build a SQL client/server database using WWW and HTML for the user interface.
- X-Big-Cursor, *X11-big-cursor mini-HOWTO*

Updated: Aug 1997. How to use enlarged mouse cursors with the X window system.

- XDMCP-HOWTO, *Linux XDMCP HOWTO*

Updated: Jun 2007. How to setup XDMCP ("X Display Manager Control Protocol").

- XDM-Xterm, *XDM and X Terminal mini-HOWTO*

Updated: May 2002. Describes the basic ideas for using XDM to manage X terminals. It is not meant to be a comprehensive discussion of all the features of XDM, but a gentle introduction to what XDM can to for X terminals.

- XFree86-HOWTO, *The Linux XFree86 HOWTO*

Updated: Sep 2001. How to obtain, install, and configure version 4.0 of the XFree86 version of the X Window System (X11R6) for Linux systems.

- XFree-Local-multi-user-HOWTO, *XFree local multi-user HOWTO*

Updated: Aug 2004. Explains the shortest way to get a working multiple local X user-capable PC system.

- XFree86-R200, *ATI R200 + XFree86 4.x mini-HOWTO*

Updated: Sep 2003. Describes the procedure of making XFree 4.x run on an ATI R200 (Radeon 8xxx series).

- XFree86-Second-Mouse, *Second Mouse in X mini-HOWTO*

Updated: Nov 2001. Quick instructions to enable a second mouse in X.

- XFree86-Touch-Screen-HOWTO, *Linux Touch Screen HOWTO*

Updated: Nov 2006. How to set up a touch screen input device under XFree86.

- XFree86-Video-Timings-HOWTO, *XFree86 Video Timings HOWTO*

Updated: Sep 2013. How to compose a mode line for your card/monitor combination under XFree86.

- XFree86-XInside, *Linux XFree-to-Xinside mini-HOWTO*

Updated: Sep 1997. How to convert an XFree86 modeline into an XInside/XiGraphics one.

- Xinerama-HOWTO, *Using Xinerama to MultiHead XFree86 v.4.0+*

Updated: Nov 2002. How to configure XFree86 Version 4.0+ with multiple monitors and the Xinerama extentions.

- XML-RPC-HOWTO, *XML-RPC HOWTO*

Updated: Apr 2001. Describes how to use XML-RPC to implement clients and servers in a variety of languages. Provides example code; applies to all operating systems with XML-RPC support.

- Xterminals, *Connecting X Terminals to Linux Mini-HOWTO*

Updated: May 2003. How to connect X Terminals with a Linux host using nfs, xfs, xdm and xdmcp.

- Xterm-Title, *How to change the title of an xterm*

Updated: Oct 1999. How to use escape sequences to dynamically change window and icon titles of an xterm.

- XWindow-Overview-HOWTO, *X Window System Architecture Overview HOWTO*

Updated: May 2001. Provides an overview of the X Window System's architecture.

- XWindow-User-HOWTO, *The X Window User HOWTO*

  Updated: Jan 2010. Provides basic information (introductory level) on understanding and configuring the X Window System for Linux users.
- ZIP-Drive, *Zip Drive Mini-HOWTO*

  Updated: Mar 2002. Provides a quick reference quide on setting up and using the Iomega ZIP drive with Linux.
- ZIP-Install, *Installing Linux on ZIP disk using ppa ZIP Drive Mini-Howto*

  Updated: Jan 1998. This document is only useful for those with the printer port version of a ZIP drive who wish to have either a portable or backup Linux system on a ZIP disk.

Chapter 6. Single list of mini-HOWTOs

The mini-HOWTOs have been folded into the full list of HOWTOs.

Chapter 7. Unmaintained HOWTOs

There are a number of unmaintained documents, which can be found at: *http://tldp.org/authors/unmaint.html*.

These are kept around since old documentation is sometimes better than none. However, you should *be aware that you are reading old documentation*.

If the date tag is too old, please consider the HOWTO as unmaintained.

However, there are exceptions, such as those that document older programs and procedures that still might be in use, or those that cover more obscure topics.

Chapter 8. Writing and Submitting a HOWTO

If you are interested in writing or maintaining a HOWTO, please contact us *FIRST* at *feedback@en.tldp.org*. If you want to maintain a unmaintained HOWTO, please try to contact the former author.

Consult the LDP Author Guide for detailed information on writing and submitting a HOWTO.

Here are a few general guidelines that you should follow when writing a HOWTO:

- Try to use meaningful structure and organization, and write clearly. Remember that many of the people reading HOWTOs do not speak English as their first language.
- Make sure that all of the information is correct. We can't stress this enough. When in doubt, speculate, but make it clear that you're only guessing.
- Make sure that you are covering the most recent version of the available software. Also, be sure to include full instructions on where software can be downloaded from (FTP site name, fullpathname), and the current version number and release date of the software.
- Include an FAQ section at the end, if appropriate. Many HOWTO documents need a ``FAQ'' or ``Common Problems'' section to cover information which cannot be covered in the regular text.
- HOWTOs *should* be submitted to us in either DocBook or linuxdoc SGML; or DocBook XML. Refer to the LDP Author Guide for further information.
- Use other HOWTOs a model. The SGML/XML source to the HOWTOs is available on Linux FTP sites. In addition, examine the LDP Author Guide, the LDP manifesto (and license guide), and the Authors Resources area of the LDP site.
- Make sure that your name, email address, date, and a version number is near the beginning of the document. You could also include WWW addresses and a postal mail address if you want. The standard header is: Title / Author's name and email address / Version number and date. For example:

  The LDP Sample HOWTO by *various_authors* v6.1, 2001-05-01

  Refer to the LDP Author Guide for further information.
- Lastly, be prepared to receive questions and comments about your writing. There are several hundreds of accesses to the HOWTO collection every day from around the world.

After you have written the HOWTO, mail the SGML source to us at *submit@en.tldp.org*.

It is *important* that you go through us when submitting a HOWTO, as we maintain the archives and need to keep track of what HOWTOs are being written and who is doing what.

Please send the LDP periodic updates whenever appropriate.

Chapter 9. Copyright Information

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If you have questions, please contact the LDP.

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