

# **[LDP](#) HOWTO-INDEX**

**Guyhem Aznar**

**Joshua Drake**

**Greg Ferguson**

Copyright © 2000 by the Respective Authors

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

---

# Table of Contents

<a href="#">Chapter 1. What Are Linux HOWTOs?</a>	1
<a href="#">Chapter 2. Where Can I Get Linux HOWTOs?</a>	2
<a href="#">Chapter 3. HOWTO Translations</a>	3
<a href="#">Chapter 4. Categorized List of HOWTOs</a>	4
<a href="#">4.1. The Linux OS</a>	4
<a href="#">4.1.1. Getting Started</a>	4
<a href="#">4.1.2. Switching from Other Operating Systems</a>	5
<a href="#">4.1.3. Distributions</a>	5
<a href="#">4.1.4. Installation</a>	6
<a href="#">4.1.5. Kernel</a>	7
<a href="#">4.1.6. Boot Loaders and Booting the OS</a>	8
<a href="#">4.1.7. Parallel Processing</a>	9
<a href="#">4.1.8. Partitions and Filesystems</a>	9
<a href="#">4.1.9. RAID</a>	10
<a href="#">4.1.10. Printing</a>	11
<a href="#">4.1.11. Shell</a>	12
<a href="#">4.1.12. Using Linux</a>	12
<a href="#">4.2. System Administration and Configuration</a>	13
<a href="#">4.2.1. Configuration</a>	13
<a href="#">4.2.2. Benchmarking</a>	14
<a href="#">4.2.3. Clustering</a>	15
<a href="#">4.2.4. Backup</a>	15
<a href="#">4.2.5. Recovery</a>	15
<a href="#">4.2.6. Security</a>	16
<a href="#">4.3. Hardware</a>	17
<a href="#">4.3.1. General</a>	17
<a href="#">4.3.2. Platforms</a>	18
<a href="#">4.3.3. Video Cards</a>	20
<a href="#">4.3.4. CPUs / Architectures</a>	20
<a href="#">4.3.5. CD-ROM / DVD-ROM Drives</a>	21
<a href="#">4.3.6. Optical Disks</a>	21
<a href="#">4.3.7. Keyboard and Console</a>	21
<a href="#">4.3.8. Digital Cameras</a>	22
<a href="#">4.3.9. Graphic Tablets</a>	22
<a href="#">4.3.10. Diskettes</a>	22
<a href="#">4.3.11. Hard Disks</a>	23
<a href="#">4.3.12. Jaz and ZIP Drives</a>	23
<a href="#">4.3.13. Mice</a>	24
<a href="#">4.3.14. Modems</a>	24
<a href="#">4.3.15. SCSI</a>	25
<a href="#">4.3.16. Serial Ports</a>	25
<a href="#">4.3.17. Sound Cards</a>	25
<a href="#">4.3.18. Tape Drives</a>	26
<a href="#">4.3.19. Touchscreens</a>	26
<a href="#">4.3.20. UPS</a>	26

# Table of Contents

<a href="#">4.3.21. Wireless</a>	26
<a href="#">4.3.22. Miscellaneous</a>	27
<a href="#">4.4. Networking</a>	27
<a href="#">4.4.1. General</a>	28
<a href="#">4.4.2. Protocols</a>	30
<a href="#">4.4.3. Dial-up</a>	30
<a href="#">4.4.4. DNS</a>	31
<a href="#">4.4.5. Virtual Private Networks</a>	31
<a href="#">4.4.6. Bridging</a>	32
<a href="#">4.4.7. Routing</a>	32
<a href="#">4.4.8. Security</a>	33
<a href="#">4.4.9. Telephony</a>	33
<a href="#">4.4.10. Miscellaneous</a>	34
<a href="#">4.5. Applications / GUI / Multimedia</a>	34
<a href="#">4.5.1. Installing Applications</a>	34
<a href="#">4.5.2. User Applications</a>	35
<a href="#">4.5.3. Server Applications</a>	37
<a href="#">4.5.3.1. DBMS</a>	37
<a href="#">4.5.3.2. Mail</a>	38
<a href="#">4.5.3.3. Usenet Network News</a>	39
<a href="#">4.5.3.4. HTTP / FTP</a>	39
<a href="#">4.5.3.5. Miscellaneous</a>	40
<a href="#">4.5.4. GUI / Window Managers</a>	41
<a href="#">4.5.4.1. X Window System</a>	41
<a href="#">4.5.4.2. Window Managers</a>	43
<a href="#">4.5.4.3. Fonts</a>	43
<a href="#">4.5.5. Multimedia</a>	43
<a href="#">4.5.5.1. Audio</a>	43
<a href="#">4.5.5.2. Video</a>	44
<a href="#">4.6. Programming</a>	44
<a href="#">4.6.1. General</a>	45
<a href="#">4.6.2. Compilers</a>	45
<a href="#">4.6.3. Languages</a>	45
<a href="#">4.6.4. Libraries</a>	46
<a href="#">4.6.5. Interfaces / API / Protocols</a>	46
<a href="#">4.6.6. Security</a>	48
<a href="#">4.6.7. Tools</a>	48
<a href="#">4.6.8. Version Control</a>	48
<a href="#">4.6.9. DBMS</a>	49
<a href="#">4.6.10. Miscellaneous</a>	49
<a href="#">4.7. Other (human) Languages</a>	50
<a href="#">4.7.1. Language Support</a>	50
<a href="#">4.7.2. Using Specific Languages</a>	50
<a href="#">4.8. Miscellaneous</a>	52
<a href="#">4.8.1. Authoring / Documentation</a>	52
<a href="#">4.8.2. Linux Advocacy / Getting (and Staying) Involved</a>	53
<a href="#">4.8.3. Hobbies and Special Interests</a>	54

# Table of Contents

<a href="#"><u>Chapter 5. Single list of HOWTOs.....</u></a>	<a href="#"><u>56</u></a>
<a href="#"><u>Chapter 6. Single list of mini-HOWTOs.....</u></a>	<a href="#"><u>78</u></a>
<a href="#"><u>Chapter 7. Special HOWTOs.....</u></a>	<a href="#"><u>90</u></a>
<a href="#"><u>Chapter 8. Unmaintained HOWTOs.....</u></a>	<a href="#"><u>91</u></a>
<a href="#"><u>Chapter 9. Writing and Submitting a HOWTO.....</u></a>	<a href="#"><u>92</u></a>
<a href="#"><u>Chapter 10. Copyright.....</u></a>	<a href="#"><u>93</u></a>

# 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.

In addition to the HOWTOs, there are a multitude of mini–HOWTOs on short, specific subjects.

---

## Chapter 2. Where Can I Get Linux HOWTOs?

HOWTOs can be retrieved via anonymous FTP from the following sites:

- <ftp://metalab.unc.edu/pub/Linux/docs/HOWTO>
- <ftp://tsx-11.mit.edu/pub/linux/docs/HOWTO>

as well as many [mirror sites](#).

You can also browse HOWTOs [in HTML format](#) or grab [Linux-html-HOWTOs.tar.gz](#) for viewing on your own PC. The files will be extracted into HOWTO/.

Many [mirror sites](#) mirror the HTML files. *www.linuxdoc.org* is heavily used, so please use a mirror site if possible.

---

# Chapter 3. HOWTO Translations

HOWTO translations are available on [metalab.unc.edu](http://metalab.unc.edu) and mirrors around the world. So far, there are:

- Chinese (zh)
- Croatian (hr)
- French (fr)
- German (de)
- Hellenic (el)
- Indonesian (id)
- Italian (it)
- Japanese (ja)
- Korean (ko)
- Polish (pl)
- 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 metalab.unc.edu, please read the directory structure specification at <http://metalab.unc.edu/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: September 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: August 2000.* 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: March 1997.* 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: August 1999.* Written for all the DOS and Windows users who have decided to switch to Linux.

- [VMS-to-Linux-HOWTO](#), *From VMS to Linux HOWTO*

*Updated: September 1999.* Aimed at all those who have been using VMS and now need or want to switch to Linux.

---

## 4.1.3. Distributions

- *The Linux Distribution HOWTO*

*Updated: June 2000.* Intended to help new users choose a Linux distribution, and to help experienced users track the state of the Linux market.

This HOWTO has been removed at the request of the author. A new Distribution HOWTO is in the process of being developed.

*Further information on Linux Distributions can be found on the Linux Weekly News (LWN) site: [Distributions section](#).*

- *Linux From Scratch HOWTO*

*Updated: September 2000.* 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](#), *Linux pre-installation checklist*

*Updated: November 2000.* An aide-memoire which may make installation of Linux a pleasant experience for you.

- [Installation-HOWTO](#), *The Linux Installation HOWTO*

*Updated: August 2000.* How to obtain and install Linux software. It is the first document which a new Linux user should read to get started.

- [Install-From-ZIP](#), *Linux Install From PPA-Zip drive mini-HOWTO*

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

- [KickStart-HOWTO](#), *RedHat Linux KickStart HOWTO*

*Updated: January 1999.* Briefly describes how to use the RedHat Linux KickStart system to rapidly install large numbers of identical Linux boxes.

- [Linux+DOS+Win95+OS2](#), *The Linux-DOS-Win95-OS2 mini-HOWTO*

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

- [Linux+FreeBSD](#), *The Linux+FreeBSD mini-HOWTO*

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

- [Linux+Solaris](#), *Linux+Solaris mini-HOWTO*

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

- [Linux+Win95](#), *Yes my Children, it CAN be DONE!*

*Updated: April 1996.* Installing both Linux and Windows 95 on your PC.

- [Linux+WinNT](#), *Linux+WindowsNT mini-HOWTO*

*Updated: November 2000.* 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: March 1998.* Will hopefully let you build and use a Parallel Line Interface Protocol.

- [RedHat-CD-HOWTO](#), *Burning a RedHat CD HOWTO*

*Updated: March 2000.* 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: April 1999.* Directions for squeezing your Linux installation into the least possible space. Particularly aimed at notebook users.

- [Small-Memory](#), *Small Memory Mini-HOWTO*

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

- [Swap-Space](#), *Linux Swap Space Mini-HOWTO*

*Updated: January 2000.* How to share your Linux swap partition with Windows.

- [Upgrade](#), *Upgrading Your linux Distribution mini-HOWTO*

*Updated: June 1996.* Hints and tips on upgrading from one linux distribution to another.

## 4.1.5. Kernel

- [BogoMips](#), *BogoMips mini-HOWTO*

*Updated: November 2000.* Some information about BogoMips, compiled from various sources.

- [BootPrompt-HOWTO](#), *The Linux BootPrompt HOWTO*

*Updated: May 1999.* 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.

- [Kernel-HOWTO](#), *The Linux Kernel HOWTO*

*Updated: January 2001.* A detailed guide to kernel configuration, compilation, upgrades, and troubleshooting for ix86-based systems.

- [Kernelld](#), *The Linux kernelld mini-HOWTO*

*Updated: May 2000.* Explains how you can use the kernelld function in the Linux kernels.

- [Modules](#), *Linux Modules Installation mini-HOWTO*

*Updated: n/a* How to successfully set up Linux with modules configured and working.

- [Process-Monitor-HOWTO](#), *Process Monitor HOWTO for Linux*

*Updated: January 2001.* How to monitor Linux/Unix processes and to re-start them automatically if they die (without any manual intervention).

- [Process-Accounting](#), *How To Enable Process Accounting on Linux*

*Updated: August 1997.* Describes how to enable system process accounting on a Linux host, and the usage of various process accounting commands

## 4.1.6. Boot Loaders and Booting the OS

- [Bootdisk-HOWTO](#), *The Linux Bootdisk HOWTO*

*Updated: November 2000.* How to design and build your own boot/root diskettes for Linux.

- [From-PowerUp-To-Bash-Prompt-HOWTO](#), *From Power Up To Bash Prompt*

*Updated: November 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: November 2000.* 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+NT-Loader](#), *NT OS Loader + Linux mini-HOWTO*

*Updated: September 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.

- [Loadlin+Win95-98-ME](#), *The Loadlin+Win95/98/ME mini-HOWTO*

*Updated: January 2001.* Describes how to use Loadlin with Windows 95/98/ME to boot to Linux.

- [MILO-HOWTO](#), *Alpha Miniloader HOWTO*

*Updated: November 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: January 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: March 1998.* How to multiboot between Windows 95, Windows NT, and Linux.

- [SRM-HOWTO](#), *SRM Firmware HOWTO*

*Updated: November 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: January 1998.* 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: October 2000.* Reviews main issues related to SMP configuration under Linux.

## 4.1.8. Partitions and Filesystems

- [Filesystems-HOWTO](#), *Filesystems HOWTO*

*Updated: August 2000.* About filesystems and accessing filesystems.

- [Ext2fs-Undeletion](#), *Linux Ext2fs Undeletion mini-HOWTO*

*Updated: February 1999.* Presents a discussion of how to retrieve deleted files from a Second Extended File System.

- [Ext2fs-Undeletion-Dir-Struct](#), *Ext2fs Undeletion of Directory Structures*

*Updated: November 2000.* Describes a straight forward way of recovering whole directory structures, instead of file by file, that have been removed by a misplaced `rm -rf`

- [Loopback-Encrypted-Filesystem-HOWTO](#), *Loopback Encrypted Filesystem HOWTO*

*Updated: November 1999.* Explains how to setup and then use a filesystem that, when mounted by a

user, dynamically and transparently encrypts its contents.

- [Loopback-Root-FS](#), *The Loopback Root Filesystem HOWTO*

*Updated: September 1999.* How to use the Linux loopback device to create a Linux native filesystem format installation that can be run from a DOS partition without re-partitioning.

- [LVM-HOWTO](#), *Logical Volume Manager HOWTO*

*Updated: May 2000.* A very hands-on HOWTO for Linux LVM.

- [NFS-Root](#), *NFS-Root mini-HOWTO*

*Updated: August 1997.* 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: February 1999.* How to create client root directories on a server that is using NFS Root mounted clients.

- [Partition](#), *Linux Partition HOWTO*

*Updated: September 2000.* Teaches you how to plan and layout disk space for your Linux system.

- [Partition-Rescue-mini-HOWTO](#), *The Linux Partition-Rescue mini-HOWTO*

*Updated: July 2000.* Describes how to rescue your Linux partition if M\$-DOG has deleted it for you.

- [Swap-Space](#), *Linux Swap Space Mini-HOWTO*

*Updated: December 1999.* How to share your Linux swap partition with Windows.

- [UMSDOS-HOWTO](#), *UMSDOS HOWTO*

*Updated: November 1995.* 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: April 2000.* Describes how to install, configure, and maintain a hardware RAID built around the 5070 SBUS host based RAID controller by Antares Microsystems.

- [Boot+Root+Raid+LILO](#), *Boot + Root + Raid + Lilo : Software Raid mini-HOWTO*

*Updated: July 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](#), *Linux DPT Hardware RAID HOWTO*

*Updated: April 1999.* How to set up hardware RAID under Linux.

- [Root-RAID-HOWTO](#), *Root RAID HOWTO cookbook*

*Updated: July 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 improvement 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: January 2000 (latest version).* 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 than the older RAID support already in those kernels.

- [Software-RAID-0.4x-HOWTO](#), *Software-RAID HOWTO (earlier implementation)*

*Updated: November 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: September 2000.* 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: February 1998.* How to use the print system under Linux.

## 4.1.11. Shell

- [Adv-Bash-Scr-HOWTO](#), *Advanced Bash-Scripting HOWTO*

*Updated: October 2000.* A guide to shell scripting, using Bash.

- [Bash-Prompt-HOWTO](#), *Bash Prompt HOWTO*

*Updated: December 1999.* 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: July 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: November 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+Slackware](#), *RPM+Slackware Mini-Howto*

*Updated: April 1998.* How to get RPM installed and working properly under Slackware.

- [Software-Building-HOWTO](#), *Building and Installing Software Packages for Linux*

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

- [Tips-HOWTO](#), *The Linux Tips HOWTO*

*Updated: June 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

[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

- [Battery-Powered](#), *Battery Powered Linux Mini-HOWTO*

*Updated: December 1997.* How to reduce a Linux system's power consumption by tweaking some of its configuration settings.

- [Bootdisk-HOWTO](#), *The Linux Bootdisk HOWTO*

*Updated: November 2000.* How to design and build your own boot/root diskettes for Linux.

- [BootPrompt-HOWTO](#), *The Linux BootPrompt HOWTO*

*Updated: May 1999.* 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: August 2000.* Aims at making the fine-tuning of your newly installed Linux box quicker and easier. You will find a set of configurations for the most common applications and services.

- [Filesystems-HOWTO](#), *Filesystems HOWTO*

*Updated: August 2000.* About filesystems and accessing filesystems.

- [HP-HOWTO](#), *HP HOWTO – Utilisation and Configuration Guide of HP Products under Linux*

*Updated: December 2000.* 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: August 2000.* How to obtain and install Linux software. It is the first document which a new Linux user should read to get started.

- [Kernel-HOWTO](#), *The Linux Kernel HOWTO*

*Updated: January 2001.* A detailed guide to kernel configuration, compilation, upgrades, and troubleshooting for ix86-based systems.

- [KickStart-HOWTO](#), *RedHat Linux KickStart HOWTO*

*Updated: January 1999.* Briefly describes how to use the RedHat Linux KickStart system to rapidly install large numbers of identical Linux boxes.

- [MultiOS-HOWTO](#), *Managing Multiple Operating Systems HOWTO*

*Updated: February 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: November 1997.* Describes common tricks and problems with Unix / Linux environment variables, especially with PATH variable.

- [Public-Web-Browser](#), *Linux web browser station*

*Updated: October 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: August 1997.* 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.

- [Visual-Bell](#), *Visible bell mini-Howto*

*Updated: November 1997.* 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: August 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: November 1998.* Introduces the Beowulf Supercomputer architecture and provides background information on parallel programming, including links to other more specific documents.

- [High-Availability-HOWTO](#), *The High Availability HOWTO*

*Updated: December 1998.* Describes the concepts of Linux-HA, the High Availability software solution for Linux.

---

### 4.2.4. Backup

- [ADSM-Backup](#), *Linux ADSM mini-HOWTO*

*Updated: January 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: August 1997.* How to use a Linux-compatible tape drive installed on an MS-DOS machine to back up the filesystem of a Linux machine.

---

### 4.2.5. Recovery

- [Ext2fs-Undeletion](#), *Linux Ext2fs Undeletion mini-HOWTO*

*Updated: February 1999.* Presents a discussion of how to retrieve deleted files from a Second Extended File System.

- [Ext2fs-Undeletion-Dir-Struct](#), *Ext2fs Undeletion of Directory Structures*

*Updated: November 2000.* Describes a straight forward way of recovering whole directory structures, instead of file by file, that have been removed by a misplaced `rm -rf`

- [LILO-crash-rescue-HOWTO](#), *LILO, Linux Crash Rescue HOWTO*

*Updated: December 2000.* Discusses methods to recover from Linux system failures.

## 4.2.6. Security

- [Bridge+Firewall](#), *Linux Bridge+Firewall Mini-HOWTO*

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

- [Bridge+Firewall+DSL](#), *Bridge + Firewall + DSL Mini-HOWTO*

*Updated: November 2000.* Configuring a Linux system to act as a firewall and bridge with a DSL network connection.

- [Domain](#), *Setting Up Your New Domain Mini HOWTO*

*Updated: October 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: February 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: November 2000.* Directions for using ppp over telnet to do network activities transparently through an Internet firewall.

- [Secure-POP+SSH](#), *Secure POP via SSH mini-HOWTO*

*Updated: September 1998.* How to set up secure POP connections using ssh.

- [Security-HOWTO](#), *Linux Security HOWTO*

*Updated: March 2000.* A general overview of security issues that face the administrator of Linux systems.

- [Shadow-Password-HOWTO](#), *Linux Shadow Password HOWTO*

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

- [Term-Firewall](#), *Using Term to Pierce an Internet Firewall*

*Updated: July 1996.* Directions for using ``term" to do network stuff through a TCP firewall that you're not supposed to be able to.

- [User-Authentication-HOWTO](#), *User Authentication HOWTO*

*Updated: May 2000.* 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
  - [Section 4.3.12](#) Jaz and ZIP Drives
  - [Section 4.3.13](#) Mice
  - [Section 4.3.14](#) Modems
  - [Section 4.3.15](#) SCSI
  - [Section 4.3.16](#) Serial Ports
  - [Section 4.3.17](#) Sound Cards
  - [Section 4.3.18](#) Tape Drives
  - [Section 4.3.19](#) Touchscreens
  - [Section 4.3.20](#) UPS
  - [Section 4.3.21](#) Wireless
  - [Section 4.3.22](#) Miscellaneous
- 

### 4.3.1. General

- [Hardware-HOWTO](#), *Linux Hardware Compatibility HOWTO*

*Updated: September 1999.* Lists most of the hardware supported by Linux and helps you locate any necessary drivers.

## 4.3.2. Platforms

- [4mb-Laptops](#), *4mb Laptop HOWTO*

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

- [Acer-Laptop-HOWTO](#), *Linux Installation on an Acer LapTop HOWTO*

*Updated: January 2001.* Describes the installation of Linux on a Acer laptop and various issues related to this.

- [Diskless-HOWTO](#), *Diskless Nodes HOWTO for Linux*

*Updated: January 2001.* How to set up a diskless Linux box.

- [Diskless-root-NFS-HOWTO](#), *Root over nfs clients & server HOWTO*

*Updated: March 1999.* How to setup a server and configure clients for diskless operation from a network.

- [Handspring-Visor](#), *Handspring-Visor mini-HOWTO*

*Updated: August 2000.* Using the Visor with Linux and your USB port.

- [HP-HOWTO](#), *HP HOWTO – Utilisation and Configuration Guide of HP Products under Linux*

*Updated: December 2000.* Describes the use of products available in the Hewlett-Packard (HP) catalog with Linux and some free software.

- [IBM7248-HOWTO](#), *Installing LinuxPPC-2000 on the IBM RS/6000 43P model 7248 HOWTO*

*Updated: December 2000.* Describes the installation of LinuxPPC-2000 on the IBM RS/6000 43P model 7248 series.

- [JavaStation-HOWTO](#), *Linux on the Sun JavaStation NC HOWTO*

*Updated: November 2000.* Describes how to enable the Linux OS on the Sun JavaStation NC.

- [Kiosk-HOWTO](#), *Kiosk HOWTO*

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

- [Laptop-HOWTO](#), *Linux Laptop HOWTO*

*Updated: November 2000.* Contains a concise survey of laptop-related (Linux content) documents, such as installation methods for laptops (via PCMCIA, without CD drive, etc.), laptop hardware features, and configurations for different (network) environments.

- [Mac-Terminal](#), *The MacTerminal mini-HOWTO*

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

- [NC-HOWTO](#), *Linux Netstation HOWTO*

*Updated: November 2000.* 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: September 1999.* 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: March 2000.* How to connect an NCD X terminal to a UNIX host.

- [PalmOS-HOWTO](#), *Palm OS Desktop HOWTO*

*Updated: February 1999.* Explains how to use your Palm OS device with a Linux system.

- [Psion-HOWTO](#), *Linux and Psion HOWTO*

*Updated: November 1999.* How to use Psion palmtops with Linux. Does not cover running Linux on a Psion palmtop.

- [Text-Terminal-HOWTO](#), *The Linux Text-Terminal HOWTO*

*Updated: January 2001.* 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: November 1999.* How to turn inexpensive legacy computers into fast terminals.

- [VAIO+Linux](#), *Linux on Sony VAIO mini-HOWTO*

*Updated: September 1998.* This document explains installation of Linux on Sony VAIO computers.

- [VME-HOWTO](#), *VME HOWTO*

*Updated: August 2000.* 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: November 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

- [3Dfx-HOWTO](#), *The Linux 3Dfx HOWTO*

*Updated: February 1998.* Describes 3Dfx graphics accelerator chip support for Linux.

- [Framebuffer-HOWTO](#), *Framebuffer HOWTO*

*Updated: February 2000.* 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: January 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: January 2001.* 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.

---

### 4.3.4. CPUs / Architectures

- [Alpha-HOWTO](#), *Brief Introduction to Alpha Systems and Processors*

*Updated: June 1997.* A brief overview of existing Alpha CPUs, chipsets and systems.

- [CPU-Design-HOWTO](#), *CPU Design HOW-TO*

*Updated: January 2001.* Helps people understand how a CPU is designed and manufactured. Contains references to various resources.

- [MIPS-HOWTO](#), *Linux/MIPS HOWTO*



*Updated: January 2001.* Describes the MIPS port of the Linux operating system, common problems and their solutions, availability and more.

- [SPARC-HOWTO](#), *SPARC-HOWTO*

*Updated: November 2000.* Describes Linux on SPARC-based workstations.

---

## 4.3.5. CD-ROM / DVD-ROM Drives

- [CD-Writing-HOWTO](#), *CD-Writing HOWTO*

*Updated: July 2000.* Explains how to write CD-ROMs under Linux.

- [CDROM-HOWTO](#), *The Linux CD-ROM HOWTO*

*Updated: March 1999.* How to install, configure, and use CD-ROM drives under Linux.

- [DVD-Playing-HOWTO](#), *DVD Playing HOWTO*

*Updated: June 2000.* A easy to follow explanation on how to get DVD movie play-back in Linux.

---

## 4.3.6. Optical Disks

- [Optical-Disk-HOWTO](#), *Linux – Optical Disk HOWTO*

*Updated: December 1998.* 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: February 1998.* 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: December 2000.* Solutions for having working Backspace and Delete keys on the console and on X.

- [Intkeyb](#), *How to setup international keyboard in X Windows*

*Updated: February 2001.* 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.

---

## 4.3.8. Digital Cameras

- [Kodak-Digitalcam-HOWTO](#), *Kodak Digital Camera HOWTO*

*Updated: January 2001.* Getting a Kodak digital camera working under GNU/Linux.

---

## 4.3.9. Graphic Tablets

- [Wacom-Tablet-HOWTO](#), *Wacom Tablet HOWTO*

*Updated: December 2000.* Installation of (not only) Wacom graphic tablets under linux and/or xfree86.

- [Wacom-USB-mini-HOWTO](#), *Wacom Graphire USB Mini-HOWTO*

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

---

## 4.3.10. Diskettes

- [Automount](#), *Automount mini-HOWTO*

*Updated: April 1999.* Describes the autof's 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: April 2000.* Describes how to install, configure, and maintain a hardware RAID built around the 5070 SBUS host based RAID controller by Antares Microsystems.

- [DPT-Hardware-RAID](#), *Linux DPT Hardware RAID HOWTO*

*Updated: April 1999.* How to set up hardware RAID under Linux.

- [Hard-Disk-Upgrade](#), *Hard Disk Upgrade Mini HOWTO*

*Updated: April 2000.* How to copy a Linux system from one hard disk to another.

- [Large-Disk-HOWTO](#), *Large Disk HOWTO*

*Updated: December 2000.* All about disk geometry and the 1024 cylinder limit for disks.

- [Multi-Disk-HOWTO](#), *HOWTO: Multi Disk System Tuning*

*Updated: July 2000.* How best to use multiple disks and partitions for a Linux system.

- [Ultra-DMA](#), *The Linux Ultra-DMA Mini-Howto*

*Updated: November 1999.* How to use Ultra-DMA aka Ultra-ATA aka Ultra33 and Ultra66 hard drives and interfaces with Linux.

---

### 4.3.12. Jaz and ZIP Drives

- [Jaz-Drive-HOWTO](#), *Jaz-drive HOWTO*

*Updated: January 2000.* Covers the configuration and use of the 1Gb and 2Gb Iomega Jaz drives under Linux.

- [ZIP-Drive](#), *Zip Drive Mini-HOWTO*

*Updated: January 1999.* Provides a quick reference guide 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: January 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

- [Busmouse-HOWTO](#), *The Linux Busmouse HOWTO*

*Updated: February 2000.* How to install, configure and use a busmouse under Linux.

- [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

- [Cable-Modem](#), *Cable Modem Providers HOWTO*

*Updated: December 2000.* Answers basic questions on how to connect your Linux box to cable modem or cable Internet provider.

- [Linmodem-HOWTO](#), *Linmodem-Mini-HOWTO*

*Updated: December 2000.* Describes Linmodem (winmodem hardware) support under Linux.

- [Linux-Modem-Sharing](#) *Linux Modem sharing mini-HOWTO*

*Updated: February 1997.* 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](#), *The Linux Modem HOWTO*

*Updated: December 2000.* Help with selecting, connecting, configuring, trouble-shooting, and understanding modems for a PC.

- [Winmodems-and-Linux-HOWTO](#), *Winmodems-and-Linux HOWTO*

*Updated: April 2000.* Helps users having a Winmodem for getting it working under Linux.

## 4.3.15. SCSI

- [SCSI-2.4-HOWTO](#), *The Linux SCSI subsystem in 2.4 HOWTO*

*Updated: January 2001.* 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-Programming-HOWTO](#), *The Linux SCSI programming HOWTO*

*Updated: May 1996.* Deals with programming the Linux generic SCSI interface.

---

## 4.3.16. Serial Ports

- [Serial-HOWTO](#), *The Linux Serial HOWTO*

*Updated: October 2000.* 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: January 2001.* Describes the basics of a Boca 16-port serial card (Boca 2016) with Linux.

- [Serial-Laplink-HOWTO](#), *Serial Laplink HOWTO*

*Updated: August 2000.* Details how to setup a laplink connection between two computers.

---

## 4.3.17. Sound Cards

- [Soundblaster-AWE](#), *Sound Blaster AWE 32/64 HOWTO*

*Updated: January 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.

---

## 4.3.18. Tape Drives

- [Ftape-HOWTO](#), *Ftape HOWTO*

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

---

## 4.3.19. Touchscreens

- [XFree86-Touch-Screen-HOWTO](#), *Linux Touch Screen HOWTO*

*Updated: October 2000.* How to set up a touch screen input device under XFree86.

---

## 4.3.20. UPS

- [UPS-HOWTO](#), *The UPS HOWTO*

*Updated: November 1997.* Helps you connect an uninterruptable power supply to a Linux box.

---

## 4.3.21. Wireless

- [Wireless-HOWTO](#), *Wireless HOWTO for Linux Systems*

*Updated: January 2001.* Document explains how to setup Wireless in Linux, compatibility problems, something about geographic requirements and more.

- [Infrared-HOWTO](#), *Linux Infrared HOWTO*

*Updated: November 2000.* Introduction to Linux and infrared devices and how to use the software provided by the Linux/IrDA project.

---

## 4.3.22. Miscellaneous

- [Clock](#), *The Clock Mini-HOWTO*

*Updated: November 2000.* How to set and keep your computer's clock on time.

- [PCI-HOWTO](#), *Linux PCI-HOWTO*

*Updated: March 1997.* Information on what works with Linux and PCI-boards and what does not.

- [PCMCIA-HOWTO](#), *Linux PCMCIA HOWTO*

*Updated: September 2000.* How to install and use PCMCIA Card Services for Linux.

- [Plug-and-Play-HOWTO](#), *The Linux Plug-and-Play HOWTO*

*Updated: November 2000.* How to get your Linux system to support Plug-and-Play.

---

## 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

[Section 4.4.10](#) Miscellaneous

## 4.4.1. General

- [Networking-Overview-HOWTO](#), *The Linux Networking Overview HOWTO*

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

- [Net-HOWTO](#), *Linux Networking HOWTO*

*Updated: July 2000.* Information about networking for Linux (relates only to version 4 of the Linux Networking Kernel or more specifically kernel releases 2.x and 2.2.x).

Previously called the Net 3/4 and Net-3 HOWTOs.

- [DHCP](#), *DHCP mini-HOWTO*

*Updated: October 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: March 1999.* How to setup a server and configure clients for diskless operation from a network.

- [Diskless-HOWTO](#), *Diskless Nodes HOWTO for Linux*

*Updated: January 2001.* How to set up a diskless Linux box.

- [Divert-Sockets-mini-HOWTO](#), *Divert Sockets mini-HOWTO*

*Updated: February 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: October 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: November 2000.* 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-Subnetworking](#), *IP Sub-Networking mini-HOWTO*



*Updated: March 1997.* Describes why and how to subnetwork an IP network – that is using a single A, B or C Class network number to function correctly on several interconnected networks.

- [IP-Alias](#), *Setting Up IP Aliasing On A Linux Machine Mini-HOWTO*

*Updated: January 2001.* How to set up and run IP aliasing on a Linux box.

- [Leased-Line](#), *Leased line mini-HOWTO*

*Updated: August 2000.* Configuring your modem and pppd to use a 2 wire twisted pair leased line.

- [Multicast-HOWTO](#), *Multicast over TCP/IP HOWTO*

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

- [Netscape+Proxy](#), *HOWTO for inHouse IntraNet*

*Updated: August 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. . .

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

*Updated: November 2000.* How to configure Linux as NIS(YP) or NIS+ client and how to install as a NIS server.

- [NFS-HOWTO](#), *NFS HOWTO*

*Updated: December 2000.* How to set up NFS clients and servers.

- [Proxy-ARP-Subnet](#), *ProxyARP Subnetting HOWTO*

*Updated: August 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.

- [Remote-Boot](#), *Linux Remote-Boot mini-HOWTO: Configuring Remote-Boot Workstations with Linux, DOS, Windows 95/98 and Windows NT*

*Updated: February 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: January 2001.* How to run remote X applications.

- [Token-Ring](#), *Token-Ring mini-HOWTO*

*Updated: January 1998.* Designed to help you install the kernel patch and also try to point out some things to look for.

- [Windows-LAN-Server-HOWTO](#), *Windows LAN server HOW-TO*

*Updated: September 2000.* 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

- [Compressed-TCP](#), *Compressed TCP/IP-Sessions using SSH-like tools*

*Updated: April 2000.* Discusses how to compress data streams.

- [Ethernet-HOWTO](#), *Linux Ethernet HOWTO*

*Updated: October 2000.* 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).

- [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.

- [PLIP](#), *LINUX PLIP mini-HOWTO*

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

- [PPP-HOWTO](#), *Linux PPP HOWTO*

*Updated: July 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.

- [SLIP-PPP-Emulator](#), *SLIP/PPP Emulator HOWTO*

*Updated: August 1997.* 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: April 2000.* How to use the Server Message Block (SMB) protocol, also called the Session Message Block, NetBIOS or LanManager protocol, with Linux using Samba.

---

## 4.4.3. Dial-up

- [call-back](#) *call-back mini HOWTO*

*Updated: June 2000.* How to set up call-back by using the Linux system and modem.

- [Diald-HOWTO](#), *Diald HOWTO*

*Updated: April 2000.* Shows some typical scenarios for easy start using Diald. *Replaces the Diald mini-HOWTO.*

- [ISP-Connectivity](#), *ISP-Connectivity mini-HOWTO*

*Updated: November 1997.* How to setup PPP, connect up to your ISP, configure mail and news, get a permanent IP (if available), get a domain name, and have a bona fide system running in a little over thirty minutes.

- [ISP-Hookup-HOWTO](#), *ISP-Hookup HOWTO*

*Updated: March 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: September 2000.* 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: January 2001.* How to become a totally "small time" DNS admin.

---

## 4.4.5. Virtual Private Networks

- [VPN-HOWTO](#), *VPN HOWTO*

*Updated: December 1999.* How to set up a Virtual Private Network with Linux.

- [VPN-Masquerade-HOWTO](#), *Linux VPN Masquerade HOWTO*

*Updated: October 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: April 1999.* How to setup a VPN using Cipe on a linux masquerading firewall.

- [Firewall-Piercing](#), *Firewall Piercing mini-HOWTO*

*Updated: November 2000.* Directions for using ppp over telnet to do network activities transparently through an Internet firewall.

---

## 4.4.6. Bridging

- [BRIDGE-STP-HOWTO](#), *Linux BRIDGE-STP-HOWTO*

*Updated: July 2000.* 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: September 1998.* Describes how to setup an ethernet bridge.

- [Bridge+Firewall](#), *Linux Bridge+Firewall Mini-HOWTO*

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

- [Bridge+Firewall+DSL](#), *Bridge + Firewall + DSL Mini-HOWTO*

*Updated: November 2000.* Configuring a Linux system to act as a firewall and bridge with a DSL network connection.

---

## 4.4.7. Routing

- [Adv-Routing-HOWTO](#), *Linux 2.4 Advanced Routing HOWTO*

*Updated: October 2000.* A very hands-on approach to iproute2, traffic shaping and a bit of netfilter.

- [PortSlave](#), *PortSlave How-To using the Linux Router*

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

- [IP-Masquerade-HOWTO](#), *Linux IP Masquerade HOWTO*

*Updated: November 2000.* How to enable the Linux IP Masquerade feature on a given Linux host.

---

## 4.4.8. Security

- [Bridge+Firewall](#), *Linux Bridge+Firewall Mini-HOWTO*

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

- [Bridge+Firewall+DSL](#), *Bridge + Firewall + DSL Mini-HOWTO*

*Updated: November 2000.* Configuring a Linux system to act as a firewall and bridge with a DSL network connection.

- [Domain](#), *Setting Up Your New Domain Mini HOWTO*

*Updated: October 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: February 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: November 2000.* Directions for using ppp over telnet to do network activities transparently through an Internet firewall.

- [SSL-RedHat-HOWTO](#), *Building a Secure RedHat Apache Server HOWTO*

*Updated: February 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

- [VoIP-HOWTO](#), *VoIP Howto*

*Updated: November 2000.* 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

- [Home-Network-mini-HOWTO](#), *Red Hat Linux 6. X as an Internet Gateway for a Home Network*

*Updated: June 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.

- [UUCP-HOWTO](#), *The Linux UUCP HOWTO*

*Updated: February 1998.* Describes the setup, care & feeding of UUCP under Linux.

---

## 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: November 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+Slackware](#), *RPM+Slackware Mini-Howto*

*Updated: April 1998.* How to get RPM installed and working properly under Slackware.

- [Software-Building-HOWTO](#), *Building and Installing Software Packages for Linux*

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

## 4.5.2. User Applications

- [AI-Alife-HOWTO](#), *Linux AI & Alife HOWTO*

*Updated: December 2000.* Information about, and links to, various AI related software libraries, applications, etc. that work on the Linux platform.

- [Astronomy-HOWTO](#), *Linux Astronomy HOWTO*

*Updated: August 2000.* Document shares tips and resources to utilize Linux solutions in the pursuit of Astronomy.

- [Bzip2](#), *Bzip2 mini-HOWTO*

*Updated: August 1999.* How to use the new bzip2 compression program.

- [Commercial-HOWTO](#), *Linux Commercial HOWTO*

*Updated: March 1999.* A listing of commercial software and applications which are offered for Linux.

- [Emacs-Beginner-HOWTO](#), *Emacs Beginner's HOWTO*

*Updated: October 1999.* Introduces Linux users to the Emacs editor.

- [Emacspeak-HOWTO](#), *The Linux Emacspeak HOWTO*

*Updated: December 2000.* How a blind user can use Linux with a speech synthesizer to replace the video display.

- [GIS-GRASS](#), *GIS-GRASS mini-HOWTO*

*Updated: November 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: April 2000.* Present a way to allow users behind an IPMasq'd system to use Napster.

- [IRC](#), *Linux IRC mini-HOWTO*

*Updated: January 2001.* Describes the basics of IRC and respective applications for Linux.

- [LinuxGL-QuakeWorld-mini-HOWTO](#), *LinuxGL (GLX) QuakeWorld Client compile mini-HOWTO*

*Updated: January 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: December 2000.* 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.

- [Mutt-GnuPG-PGP-HOWTO](#), *Mutt-i, GnuPG and PGP HOWTO*

*Updated: February 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: January 2001.* Describes how to make Microsoft NetMeeting interoperate with Linux.

- [Outlook-to-Unix-Mailbox](#), *MS Outlook to Unix Mailbox Conversion mini HOWTO*

*Updated: January 2001.* Covers conversion of old email in Microsoft Outlook (not Outlook Express!) to typical Unix file formats.

- [Quake-HOWTO](#), *Linux Quake HOWTO*

*Updated: August 1998.* How to install, run and troubleshoot Quake, QuakeWorld and Quake II on an Intel Linux system.

- [Sound-Playing-HOWTO](#), *The Linux Sound Playing HOWTO*

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

- [Speech-Recognition-HOWTO](#), *Speech Recognition HOWTO*

*Updated: November 2000.* 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: November 1999.* Information on installing the StarOffice 3.1 Office Suite by StarDivision.

- [TeX-HOWTO](#), *The teTeX HOWTO: The Linux-teTeX Local Guide*

*Updated: November 1998.* Covers the basic installation and usage of the teTeX TeX and LaTeX implementation, plus auxiliary packages like Ghostscript.

- [TkRat](#), *TkRat mini-HOWTO*

*Updated: September 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)*

*Updated: December 2000.* A guide to very quickly setup Vim color editor on Linux or Unix systems.

- [VoIP-HOWTO](#), *VoIP Howto*

*Updated: November 2000.* 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.

- [WordPerfect](#), *WordPerfect Mini-howto*

*Updated: August 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: October 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

- [IngresII-HOWTO](#), *Ingres II HOWTO*

*Updated: June 2000.* Helps install the Ingres II Relational Database Management System on Linux.

- [Oracle-7-HOWTO](#), *Oracle 7 Database HOWTO*

*Updated: August 1998.* A guide to installing and configuring the Oracle 7 Database Server on a Linux system.

- [Oracle-8-HOWTO](#), *Oracle (8) for Linux Installation HOWTO*

*Updated: June 2000.* A guide to installing and configuring the *Oracle 8i Enterprise Edition for Linux*.

- [PostgreSQL-HOWTO](#), *Database-SQL-RDBMS HOWTO for Linux (PostgreSQL Object Relational Database System)*

*Updated: January 2001.* A "practical guide" to very quickly setup a SQL Database engine and front end tools on a Unix system.

- [WWW-mSQL-HOWTO](#), *A mSQL and perl Web Server HOWTO*

*Updated: September 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: October 2000.* A comprehensive guide to installing, configuring, and running Cyrus Imap and Cyrus Sasl.

- [Mail-Administrator-HOWTO](#), *The Linux Electronic Mail Administrator HOWTO*

*Updated: January 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: September 1997.* 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: November 2000.* How to feed a mailing list to a news server.

- [Majordomo-MajorCool-HOWTO](#), *Majordomo and MajorCool HOWTO*

*Updated: November 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: June 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: January 2001.* Covers conversion of old email in Microsoft Outlook (not Outlook Express!) to typical Unix file formats.

- [Qmail+MH](#), *mini-HOWTO install qmail with MH*

*Updated: March 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: April 2000.* 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: September 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: April 2000.* Explains how to setup VMailMgr to support pop3 virtual domain services in conjunction with Qmail.

---

### 4.5.3.3. Usenet Network News

- [News-Leafsite](#), *News Leafsite mini-HOWTO*

*Updated: January 1998.* This will help you to configure a small leafsite for Usenet News using the free software package Leafnode.

---

### 4.5.3.4. HTTP / FTP

- [Apache-Overview-HOWTO](#), *Apache Overview How-to*

*Updated: September 2000.* An overview of the Apache webserver and related projects. It provides pointers for further information and implementation details.

- [Apache-mods](#),  
*Apache+DSO+mod\_ssl+mod\_perl+php+mod\_auth\_nds+mod\_auth\_mysql+mod\_fastcgi  
mini-HOWTO*

*Updated: April 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: July 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.

- [FTP](#), *FTP mini-HOWTO*

*Updated: January 2000.* How to use ftp clients and servers

- [ISP-Setup-RedHat-HOWTO](#), *"Pocket" ISP based on RedHat Linux*

*Updated: January 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: August 1997.* How to setup an Intranet using Linux as the server which binds Unix, Netware, NT and Windows together.

- [phhttpd-HOWTO](#), *PHHTTPD*

*Updated: January 2000.* 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-RedHat-HOWTO](#), *Building a Secure RedHat Apache Server HOWTO*

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

- [WWW-HOWTO](#), *Linux WWW HOWTO*

*Updated: August 1999.* Information about setting up WWW services under Linux (both server and client).

- [TransparentProxy](#), *Transparent Proxy with Squid mini-HOWTO*

*Updated: January 2001.* Provides information on how to setup a transparent caching HTTP proxy server using only Linux and squid.

---

### 4.5.3.5. Miscellaneous

- [CDServer-HOWTO](#), *CDServer-HOWTO*

*Updated: September 2000.* 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: November 1997.* Describes in detail one of the simplest ways to setup a fax server on your

Linux system.

- [Kiosk-HOWTO](#), *Kiosk HOWTO*

*Updated: October 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: September 2000.* Information about installing, configuring, running and maintaining a LDAP (Lightweight Directory Access Protocol) Server on a Linux machine.

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

*Updated: November 2000.* How to configure Linux as NIS(YP) or NIS+ client and how to install as a NIS server.

- [Tango-HOWTO](#), *Tango 2000 HOWTO*

*Updated: July 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: August 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: December 2000.* Solutions for having working Backspace and Delete keys on the console and on X.

- [Font-Deuglification-mini-HOWTO](#), *XFree86 Font Deuglification Mini HOWTO*

*Updated: October 2000.* How to fix ugly and unreadable X Window fonts.

- [i810-HOWTO](#), *i810 with XFree86 4.x HOWTO*

*Updated: January 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: February 2001.* 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: December 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: January 2001.* How to run remote X applications.

- [X-Big-Cursor](#), *X11-big-cursor mini-HOWTO*

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

- [XDM-Xterm](#), *XDM and X Terminal mini-HOWTO*

*Updated: November 2000.* 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 do for X terminals.

- [XDMCP](#), *Linux XDMCP HOWTO*

*Updated: November 2000.* How to setup XDMCP ( "X Display Manager Control Protocol").

- [XFree86-HOWTO](#), *The Linux XFree86 HOWTO*

*Updated: August 2000.* How to obtain, install, and configure version 4.0 of the XFree86 version of the X Window System (X11R6) for Linux systems.

- [XFree86-Touch-Screen-HOWTO](#), *Linux Touch Screen HOWTO*

*Updated: October 2000.* How to set up a touch screen input device under XFree86.

- [XFree86-Video-Timings-HOWTO](#), *XFree86 Video Timings HOWTO*

*Updated: August 2000.* How to compose a mode line for your card/monitor combination under XFree86.

- [XFree86-XInside](#), *Linux XFree-to-Xinside mini-HOWTO*

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

- [Xinerama-HOWTO](#), *Using the Xinerama Extensions to MultiHead X v.4.0*

*Updated: November 2000.* How to configure XFree86 Version 4.0 with Multiple monitors and the Xinerama extensions.

- [XWindow-User-HOWTO](#), *The X Window User HOWTO*

*Updated: September 1999.* Information on configuring the X Window environment for the Linux user, as well as for the beginning system administrator attempting to sort through the many configuration options and details of X Window.

---

#### 4.5.4.2. Window Managers

- [MGR-HOWTO](#), *The MGR Window System HOWTO*

*Updated: May 1996.* Information on the installation, configuration and running of the MGR Window System.

---

#### 4.5.4.3. Fonts

- [Font-Deuglification-mini-HOWTO](#), *XFree86 Font Deuglification Mini HOWTO*

*Updated: July 2000.* How to fix ugly and unreadable X Window fonts.

- [Font-HOWTO](#), *Font HOWTO*

*Updated: March 2000.* Provides a comprehensive source to act as a starting point for any and all font questions about Linux.

- [TT-Debian](#), *TrueType Fonts in Debian mini-HOWTO*

*Updated: January 2000.* How to configure a Debian system to use TrueType fonts for display and printing.

---

### 4.5.5. Multimedia

#### 4.5.5.1. Audio

- [Alsa-sound](#), *Alsa-sound-mini-HOWTO*

*Updated: November 1999.* Describes the installation of the ALSA sound drivers for Linux.

- [Sound-HOWTO](#), *The Linux Sound HOWTO*

*Updated: March 1999.* Describes sound support for Linux (hardware, configuration, etc).

- [Sound-Playing-HOWTO](#), *The Linux Sound Playing HOWTO*

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

- [MP3-HOWTO](#), *The Linux MP3 HOWTO*

*Updated: October 2000.* Describes the hardware, software and procedures needed to encode, play and stream MP3 sound files under Linux.

---

#### 4.5.5.2. Video

- [DVD-Playing-HOWTO](#), *DVD Playing HOWTO*

*Updated: June 2000.* A easy to follow explanation on how to get DVD movie play-back in Linux.

- [BTTV-Mini-HOWTO-0.3](#), *The BTTV Mini-HOWTO*

*Updated: February 2000.* Describes the hardware, software, and procedures needed to use a bt8x8 chipset based frame grabber or TV tuner card under Linux.

---

### 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

[Section 4.6.10](#) Miscellaneous

---



## 4.6.1. General

- [Software-Building-HOWTO](#), *Building and Installing Software Packages for Linux*

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

- [Software-Release-Practice-HOWTO](#), *Software Release Practice HOWTO*

*Updated: August 2000.* Describes good release practices for Linux open-source projects.

---

## 4.6.2. Compilers

- [GCC-HOWTO](#), *The Linux GCC HOWTO*

*Updated: May 1999.* Covers how to set up the GNU C compiler and development libraries under Linux; gives an overview of compiling, linking, running and debugging programs under it.

---

## 4.6.3. Languages

- [Programming-Languages](#), *Programming Languages mini-HOWTO*

*Updated: July 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*

*Updated: October 2000.* A guide to shell scripting, using Bash.

- [Assembly-HOWTO](#), *Linux Assembly HOWTO*

*Updated: January 2001.* 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: July 2000.* This article intends to help you to start programming basic-to-intermediate shell scripts.

- [C++Programming-HOWTO](#), *C++ Programming HOWTO*

*Updated: February 2001.* Discusses methods to avoid memory problems in C++ and also will help you to program properly in C++ language. Applies to all operating systems.

- [Enterprise-Java-for-Linux-HOWTO](#), *Enterprise Java for Linux HOWTO*

*Updated: January 1999.* 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: December 1998.* Explains how to set up your server to allow CGI programs written in Java and how to use Java to write CGI programs.

- [PHP-HOWTO](#), *PHP HOWTO*

*Updated: January 2001.* How to develop PHP programs and also to migrate all the Windows 95 GUI applications to powerful PHP + HTML + DHTML + XML + Java applets + Javascript. Applies to all the operating systems where PHP is ported.

- [TclTk-HOWTO](#), *The Linux Tcl and Tk HOWTO*

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

---

## 4.6.4. Libraries

- [Program-Library-HOWTO](#), *Program Library HOWTO*

*Updated: December 2000.* This HOWTO for programmers discusses how to create and use program libraries on Linux. This includes static libraries, shared libraries, and dynamically loaded libraries.

- [Glibc2-HOWTO](#), *Glibc 2 HOWTO*

*Updated: June 1998.* Covers installing and using the GNU C Library version 2 (libc6) on Linux systems.

---

## 4.6.5. Interfaces / API / Protocols

- [IO-Port-Programming](#), *Linux I/O port programming mini-HOWTO*

*Updated: December 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.

- [Kernel](#), *The Linux kernel mini-HOWTO*

*Updated: May 2000.* Explains how you can use the kernel function in the Linux kernels.

- [Lego](#), *Lego Mindstorm with Linux Mini-HOWTO*

*Updated: October 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.

- [NLM-HOWTO](#), *NetWare Loadable Module Programming HOWTO*

*Updated: August 2000.* 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: January 1998.* 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.

- [SCSI-2.4-HOWTO](#), *The Linux SCSI subsystem in 2.4 HOWTO*

*Updated: January 2001.* 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-Programming-HOWTO](#), *The Linux SCSI programming HOWTO*

*Updated: May 1996.* Deals with programming the Linux generic SCSI interface.

- [Serial-Programming-HOWTO](#), *The Linux Serial Programming HOWTO*

*Updated: January 1998.* How to program communications with devices over a serial port on a Linux box.

- [SMB-HOWTO](#), *SMB HOWTO*

*Updated: April 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: January 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: January 2001.* 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*

*Updated: January 2001.* Helps you to format (beautify) C/C++ programs so that they are more readable and conform to your site coding standards. Applies to all operating systems.

- [C-editing-with-VIM-HOWTO](#), *C editing with VIM HOWTO*

*Updated: January 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*

*Updated: July 2000.* Will help you to de-compile the Java class programs.

- [RPM-HOWTO](#), *RPM HOWTO – RPM at Idle*

*Updated: November 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.

- [Vim-HOWTO](#), *Vim Color Editor HOWTO (Vi Improved w/syntax color highlighting)*

*Updated: December 2000.* A guide to very quickly setup Vim color editor on Linux or Unix systems.

---

## 4.6.8. Version Control

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

*Updated: January 2001.* A "practical guide" to very quickly setup a CVS/RCS source code control system.

- [RCS](#), *The RCS mini-HOWTO*

*Updated: August 1997.* Covers basic installation and usage of RCS, the GNU Revision Control System, under Linux.

---

## 4.6.9. DBMS

- [DB2-HOWTO](#), *DB2 Version 7.1 for Linux HOWTO*

*Updated: January 2001.* Explicit instructions on installing DB2 Universal Database Version 7.1 for Linux on the following Intel x86-based distributions: Caldera OpenLinux 2.4, Debian, Red Hat Linux 6.2, SuSE Linux 6.2 and 6.3, and TurboLinux 6.0.

- [IngresII-HOWTO](#), *Ingres II HOWTO*

*Updated: June 2000.* Helps install the Ingres II Relational Database Management System on Linux.

- [Oracle-7-HOWTO](#), *Oracle 7 Database HOWTO*

*Updated: August 1998.* A guide to installing and configuring the Oracle 7 Database Server on a Linux system.

- [Oracle-8-HOWTO](#), *Oracle (8) for Linux Installation HOWTO*

*Updated: June 2000.* A guide to installing and configuring the Oracle 8i Enterprise Edition for Linux.

- [PostgreSQL-HOWTO](#), *Database-SQL-RDBMS HOWTO for Linux (PostgreSQL Object Relational Database System)*

*Updated: January 2001.* A "practical guide" to very quickly setup a SQL Database engine and front end tools on a Unix system.

- [WWW-mSQL-HOWTO](#), *A mSQL and perl Web Server HOWTO*

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

---

## 4.6.10. Miscellaneous

- [AI-Alife-HOWTO](#), *Linux AI & Alife HOWTO*

*Updated: December 2000.* Information about, and links to, various AI related software libraries,

applications, etc. that work on the Linux platform.

- [Tango-HOWTO](#), *Tango 2000 HOWTO*

*Updated: July 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: August 2000.* 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: June 2000.* 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: October 2000.* How to tweak Linux for Belgian users; lists Linux user groups, businesses and other resources in Belgium.

- [Chinese-HOWTO](#), *Chinese HOWTO*

*Updated: June 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: March 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: August 1999.*

- [Finnish-HOWTO](#), *Finnish HOWTO*

*Updated: February 1996.* How to "finlandize" Linux – Finnish keyboard mapping, time zone, 8-bit clean settings for applications, etc. (written in Finnish).

- [German-HOWTO](#), *German HOWTO*

*Updated: March 1997.* Addresses Linux localization issues specific to German users (written in German).

- [Hebrew-HOWTO](#), *The Hebrew HOWTO*

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

- [Hellenic-HOWTO](#), *Hellenic HOWTO*

*Updated: August 1997.* Addresses Linux localization issues specific to Greek users (written in Hellenic).

- [Italian-HOWTO](#), *Linux Italian HOWTO*

*Updated: November 1998.* Addresses Linux localization issues specific to Italian users (written in Italian).

- [Serbian-HOWTO](#), *Serbian HOWTO*

*Updated: November 1998.* Addresses Linux localization issues specific to Serbian users (written in Serbian).

- [Slovenian-HOWTO](#), *Slovenian HOWTO*

*Updated: February 1999.* Addresses Linux localization issues specific to Slovenian users (written in Slovenian).

- [Spanish-HOWTO](#), *Spanish Linux HOWTO*

*Updated: August 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).

- [Thai-HOWTO](#), *The Linux Thai HOWTO*

*Updated: August 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: September 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-Install](#), *DocBook Install mini-HOWTO*

*Updated: January 2001.* 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.

- [HOWTO-HOWTO](#), *HOWTO HOWTO*

*Updated: July 2000.* Lists the tools, procedures, and hints to get LDP authors up to speed and writing.

*Replaced July 2000 by the [LDP Author Guide](#).*

- [LinuxDoc+Emacs+Ispell-HOWTO](#), *LinuxDoc+Emacs+Ispell HOWTO*

*Updated: February 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.

- [Man-Page](#), *The Linux Man Page mini-HOWTO*

*Updated: January 2000.* 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.



## 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: December 1999.* Discusses methods that can be used to approach commercial software companies to convince them to port their programs to Linux.

- [Consultants-HOWTO](#), *Linux Consultants HOWTO*

*Updated: August 2000.* A listing of companies providing commercial Linux related support.

- [Event-HOWTO](#), *Event HOWTO*

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

- [META-FAQ](#), *Linux Meta-FAQ*

*Updated: October 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: July 2000.* 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: September 2000.* 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: October 2000.* 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: April 1998.* A guide to founding, maintaining, and growing a Linux User Group.

- [VAR-HOWTO](#), *Linux VAR HOWTO*

*Updated: August 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

- [Access-HOWTO](#), *Linux Access HOWTO*

*Updated: March 1997.* Covers using adaptive technology to make Linux accessible to those who could not use it otherwise.

- [Astronomy-HOWTO](#), *Linux Astronomy HOWTO*

*Updated: August 2000.* Document shares tips and resources to utilize Linux solutions in the pursuit of Astronomy.

- [AX25-HOWTO](#), *Linux AX25-HOWTO, Amateur Radio*

*Updated: October 1997.* How to install and configure support for the AX. 25 packet radio protocol utilized by Amateur Radio Operators worldwide.

- [Coffee](#), *COFFEE-HOWTO*

*Updated: November 2000.* Yes, Linux DOES make coffee, and it tastes good.

- [Ecology-HOWTO](#), *Linux Ecology HOWTO*

*Updated: November 2000.* Discusses ways Linux computers can be used as a means to protect our environment, by using its features to save power or paper.

- [FBB](#), *FBB Packet-radio BBS mini-HOWTO*

*Updated: December 2000.* Covers the installation and use of the most popular amateur packet-radio BBS software FBB.

- [Medicine-HOWTO](#), *Linux Medicine-HOWTO*

*Updated: November 2000.* Some pointers to Linux software (mostly GPLed) for the medical sciences.

- [Netrom-Node](#), *Netrom-Node mini-Howto*

*Updated: October 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.

- [Wearable-HOWTO](#), *Wearable HOWTO*

*Updated: November 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.

---

# Chapter 5. Single list of HOWTOs

The following Linux HOWTOs are currently available:

- [3Dfx-HOWTO](#), *The Linux 3Dfx HOWTO*

*Updated: February 1998.* Describes 3Dfx graphics accelerator chip support for Linux.

- [4mb-Laptops](#), *4mb Laptop HOWTO*

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

- [Access-HOWTO](#), *Linux Access HOWTO*

*Updated: March 1997.* Covers using adaptive technology to make Linux accessible to those who could not use it otherwise.

- [Acer-Laptop-HOWTO](#), *Linux Installation on an Acer LapTop HOWTO*

*Updated: January 2001.* Describes the installation of Linux on a Acer laptop and various issues related to this.

- [Adv-Bash-Scr-HOWTO](#), *Advanced Bash-Scripting HOWTO*

*Updated: October 2000.* A guide to shell scripting, using Bash.

- [Adv-Routing-HOWTO](#), *Linux 2.4 Advanced Routing HOWTO*

*Updated: October 2000.* A very hands-on approach to iproute2, traffic shaping and a bit of netfilter.

- [AI-Alife-HOWTO](#), *Linux AI & Alife HOWTO*

*Updated: December 2000.* 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: June 1997.* A brief overview of existing Alpha CPUs, chipsets and systems.

- [Antares-RAID-sparcLinux-HOWTO](#), *Antares-RAID-sparcLinux-HOWTO*

*Updated: April 2000.* Describes how to install, configure, and maintain a hardware RAID built around the 5070 SBUS host based RAID controller by Antares Microsystems.

- [Apache-Overview-HOWTO](#), *Apache Overview How-to*

*Updated: September 2000.* An overview of the Apache webserver and related projects. It provides pointers for further information and implementation details.

- [Assembly-HOWTO](#), *Linux Assembly HOWTO*

*Updated: January 2001.* 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: August 2000.* Document shares tips and resources to utilize Linux solutions in the pursuit of Astronomy.

- [AX25-HOWTO](#), *Linux AX25-HOWTO, Amateur Radio*

*Updated: October 1997.* How to install and configure support for the AX. 25 packet radio protocol utilized by Amateur Radio Operators worldwide.

- [Bash-Prog-Intro-HOWTO](#), *BASH Programming – Introduction HOWTO*

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

- [Bash-Prompt-HOWTO](#), *Bash Prompt HOWTO*

*Updated: December 1999.* Creating and controlling terminal and xterm prompts is discussed, including incorporating standard escape sequences to give username, current working directory, time, etc.

- [Belarusian-HOWTO](#), *Linux Belarusian HOWTO*

*Updated: June 2000.* 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: October 2000.* How to tweak Linux for Belgian users; lists Linux user groups, businesses and other resources in Belgium.

- [Benchmarking-HOWTO](#), *Linux Benchmarking HOWTO*

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

- [Beowulf-HOWTO](#), *Beowulf HOWTO*

*Updated: November 1998.* Introduces the Beowulf Supercomputer architecture and provides background information on parallel programming, including links to other more specific documents.

- [Boot+Root+Raid+LILO](#), *Boot + Root + Raid + Lilo : Software Raid mini-HOWTO*

*Updated: July 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: November 2000.* How to design and build your own boot/root diskettes for Linux.

- [BootPrompt-HOWTO](#), *The Linux BootPrompt HOWTO*

*Updated: May 1999.* 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-STP-HOWTO](#), *Linux BRIDGE-STP-HOWTO*

*Updated: July 2000.* 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?

- [Busmouse-HOWTO](#), *The Linux Busmouse HOWTO*

*Updated: February 2000.* How to install, configure and use a busmouse under Linux.

- [C++Programming-HOWTO](#), *C++ Programming HOWTO*

*Updated: February 2001.* Discusses methods to avoid memory problems in C++ and also will help you to program properly in C++ language. Applies to all operating systems.

- [C-C++Beautifier-HOWTO](#), *C-C++ Beautifier HOWTO*

*Updated: January 2001.* Helps you to format (beautify) C/C++ programs so that they are more readable and conform to your site coding standards. Applies to all operating systems.

- [C-editing-with-VIM-HOWTO](#), *C editing with VIM HOWTO*

*Updated: January 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 Providers HOWTO*

*Updated: December 2000.* Answers basic questions on how to connect your Linux box to cable modem or cable Internet provider.

- [CDServer-HOWTO](#), *CDServer-HOWTO*

*Updated: September 2000.* 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: July 2000.* Explains how to write CD-ROMs under Linux.

- [CDROM-HOWTO](#), *The Linux CD-ROM HOWTO*

*Updated: March 1999.* How to install, configure, and use CD-ROM drives under Linux.

- [Chinese-HOWTO](#), *Chinese HOWTO*

*Updated: June 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: September 2000.* 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.

- [Commercial-HOWTO](#), *Linux Commercial HOWTO*

*Updated: March 1999.* A listing of commercial software and applications which are offered for Linux.

- [Config-HOWTO](#), *Configuration HOWTO*

*Updated: August 2000.* Aims at making the fine-tuning of your newly installed Linux box quicker and easier. You will find a set of configurations for the most common applications and services.

- [Consultants-HOWTO](#), *Linux Consultants HOWTO*

*Updated: August 2000.* A listing of companies providing commercial Linux related support.

- [CPU-Design-HOWTO](#), *CPU Design HOW-TO*

*Updated: January 2001.* Helps people understand how a CPU is designed and manufactured. Contains references to various resources.

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

*Updated: January 2001.* A "practical guide" to very quickly setup a CVS/RCS source code control system.

- [Cyrus-IMAP](#), *Cyrus IMAP HOWTO*

*Updated: October 2000.* A comprehensive guide to installing, configuring, and running Cyrus Imap and Cyrus Sasl.

- [Danish-HOWTO](#), *The Linux Danish/International HOWTO*

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

- [DB2-HOWTO](#), *DB2 Version 7.1 for Linux HOWTO*

*Updated: January 2001.* Explicit instructions on installing DB2 Universal Database Version 7.1 for Linux on the following Intel x86-based distributions: Caldera OpenLinux 2.4, Debian, Red Hat Linux 6.2, SuSE Linux 6.2 and 6.3, and TurboLinux 6.0.

- [Diald-HOWTO](#), *Diald HOWTO*

*Updated: April 2000.* Shows some typical scenarios for easy start using Diald. *Replaces the Diald mini-HOWTO.*

- [Diskless-HOWTO](#), *Diskless Nodes HOWTO for Linux*

*Updated: January 2001.* How to set up a diskless Linux box.

- [Diskless-root-NFS-HOWTO](#), *Root over nfs clients & server HOWTO*

*Updated: March 1999.* How to setup a server and configure clients for diskless operation from a network.

- *The Linux Distribution HOWTO*

*Updated: June 2000.* Intended to help new users choose a Linux distribution, and to help experienced users track the state of the Linux market.

This HOWTO has been removed at the request of the author. A new Distribution HOWTO is in the process of being developed.

*Further information on Linux Distributions can be found on the Linux Weekly News (LWN) site: [Distributions section](#).*

- [DNS-HOWTO](#), *DNS HOWTO*

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

- [DOS-Win-to-Linux-HOWTO](#), *From DOS/Windows to Linux HOWTO*

*Updated: August 2000.* Written for all the DOS and Windows users who have decided to switch to Linux.

- [DOSEMU-HOWTO](#), *The dosemu HOWTO*

*Updated: March 1997.* DOSEMU stands for DOS Emulation, and is an application that enables the Linux OS to run many DOS programs.

- [DSL-HOWTO](#), *DSL HOWTO for Linux*

*Updated: November 2000.* 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.



- [DVD-Playing-HOWTO](#), *DVD Playing HOWTO*

*Updated: June 2000.* A easy to follow explanation on how to get DVD movie play-back in Linux.

- [Ecology-HOWTO](#), *Linux Ecology HOWTO*

*Updated: November 2000.* Discusses ways Linux computers can be used as a means to protect our environment, by using its features to save power or paper.

- [Emacs-Beginner-HOWTO](#), *Emacs Beginner's HOWTO*

*Updated: October 1999.* Introduces Linux users to the Emacs editor.

- [Emacspeak-HOWTO](#), *The Linux Emacspeak HOWTO*

*Updated: December 2000.* How a blind user can use Linux with a speech synthesizer to replace the video display.

- [Enterprise-Java-for-Linux-HOWTO](#), *Enterprise Java for Linux HOWTO*

*Updated: January 1999.* 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: August 1999.*

- [Ethernet-HOWTO](#), *Linux Ethernet HOWTO*

*Updated: October 2000.* 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).

- [Event-HOWTO](#), *Event HOWTO*

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

- [Filesystems-HOWTO](#), *Filesystems HOWTO*

*Updated: August 2000.* About filesystems and accessing filesystems.

- [Finnish-HOWTO](#), *Finnish HOWTO*

*Updated: February 1996.* How to "finlandize" Linux – Finnish keyboard mapping, time zone, 8-bit clean settings for applications, etc. (written in Finnish).

- [Firewall-HOWTO](#), *Firewall and Proxy Server HOWTO*

*Updated: February 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.

- [Font-HOWTO](#), *Font HOWTO*

*Updated: March 2000.* Provides a comprehensive source to act as a starting point for any and all font questions about Linux.

- [Framebuffer-HOWTO](#), *Framebuffer HOWTO*

*Updated: February 2000.* 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: December 1999.*

- [From-PowerUp-To-Bash-Prompt-HOWTO](#), *From Power Up To Bash Prompt*

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

- [GCC-HOWTO](#), *The Linux GCC HOWTO*

*Updated: May 1999.* Covers how to set up the GNU C compiler and development libraries under Linux; gives an overview of compiling, linking, running and debugging programs under it.

- [German-HOWTO](#), *German HOWTO*

*Updated: March 1997.* Addresses Linux localization issues specific to German users (written in German).

- [Glibc2-HOWTO](#), *Glibc 2 HOWTO*

*Updated: June 1998.* Covers installing and using the GNU C Library version 2 (libc6) on Linux systems.

- [Hardware-HOWTO](#), *Linux Hardware Compatibility HOWTO*

*Updated: September 1999.* Lists most of the hardware supported by Linux and helps you locate any necessary drivers.

- [Hebrew-HOWTO](#), *The Hebrew HOWTO*

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

- [Hellenic-HOWTO](#), *Hellenic HOWTO*

*Updated: August 1997.* Addresses Linux localization issues specific to Greek users (written in Hellenic).

- [HOWTO-HOWTO](#), *HOWTO HOWTO*

*Updated: July 2000.* Lists the tools, procedures, and hints to get LDP authors up to speed and writing.

*Replaced July 2000 by the [LDP Author Guide](#).*

- [HOWTO-INDEX](#), *The Linux HOWTO Index*

*Updated: frequently.* Index to the Linux HOWTOs as well as other information about the HOWTO project.

- [HP-HOWTO](#), *HP HOWTO – Utilisation and Configuration Guide of HP Products under Linux*

*Updated: December 2000.* 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: January 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 LinuxPPC-2000 on the IBM RS/6000 43P model 7248 HOWTO*

*Updated: December 2000.* Describes the installation of LinuxPPC-2000 on the IBM RS/6000 43P model 7248 series.

- [INFO-SHEET](#), *Linux Information Sheet*

*Updated: September 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: November 2000.* Introduction to Linux and infrared devices and how to use the software provided by the Linux/IrDA project.

- [IngresII-HOWTO](#), *Ingres II HOWTO*

*Updated: June 2000.* Helps install the Ingres II Relational Database Management System on Linux.

- [Installation-HOWTO](#), *The Linux Installation HOWTO*

*Updated: August 2000.* How to obtain and install Linux software. It is the first document which a new Linux user should read to get started.

- [Intranet-Server-HOWTO](#), *The Linux Intranet Server HOWTO*

*Updated: August 1997.* How to setup an Intranet using Linux as the server which binds Unix, Netware, NT and Windows together.

- [IP-Masquerade-HOWTO](#), *Linux IP Masquerade HOWTO*

*Updated: November 2000.* How to enable the Linux IP Masquerade feature on a given Linux host.

- [IPCHAINS-HOWTO](#), *Linux IPCHAINS HOWTO*

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

- [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.

- [ISP-Hookup-HOWTO](#), *ISP-Hookup HOWTO*

*Updated: March 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: January 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: November 1998.* Addresses Linux localization issues specific to Italian users (written in Italian).

- [Java-CGI-HOWTO](#), *Java CGI HOWTO*

*Updated: December 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-Compiler-HOWTO](#), *Java Compiler HOWTO*

*Updated: July 2000.* Will help you to de-compile the Java class programs.

- [JavaStation-HOWTO](#), *Linux on the Sun JavaStation NC HOWTO*

*Updated: November 2000.* Describes how to enable the Linux OS on the Sun JavaStation NC.

- [Jaz-Drive-HOWTO](#), *Jaz-drive HOWTO*

*Updated: January 2000.* Covers the configuration and use of the 1Gb and 2Gb Iomega Jaz drives under Linux.

- [Kernel-HOWTO](#), *The Linux Kernel HOWTO*

*Updated: January 2001.* A detailed guide to kernel configuration, compilation, upgrades, and troubleshooting for ix86-based systems.

- [Keyboard-and-Console-HOWTO](#), *The Linux keyboard and console HOWTO*

*Updated: February 1998.* Contains some information about the Linux (v2.0) keyboard and console, and the use of non-ASCII characters.

- [KickStart-HOWTO](#), *RedHat Linux KickStart HOWTO*

*Updated: January 1999.* Briefly describes how to use the RedHat Linux KickStart system to rapidly install large numbers of identical Linux boxes.

- [Kiosk-HOWTO](#), *Kiosk HOWTO*

*Updated: October 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: January 2001.* Getting a Kodak digital camera working under GNU/Linux.

- [Laptop-HOWTO](#), *Linux Laptop HOWTO*

*Updated: November 2000.* Contains a concise survey of laptop-related (Linux content) documents, such as installation methods for laptops (via PCMCIA, without CD drive, etc.), laptop hardware features, and configurations for different (network) environments.

- [Large-Disk-HOWTO](#), *Large Disk HOWTO*

*Updated: December 2000.* All about disk geometry and the 1024 cylinder limit for disks.

- [LDAP-HOWTO](#), *LDAP Linux HOWTO*

*Updated: September 2000.* Information about installing, configuring, running and maintaining a LDAP (Lightweight Directory Access Protocol) Server on a Linux machine.

- [Linmodem-HOWTO](#), *Linmodem-Mini-HOWTO*

*Updated: December 2000.* Describes Linmodem (winmodem hardware) support under Linux.

- [LILO-crash-rescue-HOWTO](#), *LILO, Linux Crash Rescue HOWTO*

*Updated: December 2000.* Discusses methods to recover from Linux system failures.

- *Linux From Scratch HOWTO*

*Updated: September 2000.* 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.

- [LinuxDoc+Emacs+Ispell-HOWTO](#), *LinuxDoc+Emacs+Ispell HOWTO*

*Updated: February 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.

- [Loopback-Encrypted-Filesystem-HOWTO](#), *Loopback Encrypted Filesystem HOWTO*

*Updated: November 1999.* Explains how to setup and then use a filesystem that, when mounted by a user, dynamically and transparently encrypts its contents.

- [LVM-HOWTO](#), *Logical Volume Manager HOWTO*

*Updated: May 2000.* A very hands-on HOWTO for Linux LVM.

- [Mail-Administrator-HOWTO](#), *The Linux Electronic Mail Administrator HOWTO*

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

- [Mail-User-HOWTO](#), *The Linux Mail User HOWTO*

*Updated: December 2000.* 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.

- [Majordomo-MajorCool-HOWTO](#), *Majordomo and MajorCool HOWTO*

*Updated: November 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).

- [Medicine-HOWTO](#), *Linux Medicine-HOWTO*

*Updated: November 2000.* Some pointers to Linux software (mostly GPLed) for the medical sciences.

- [META-FAQ](#), *Linux Meta-FAQ*

*Updated: October 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.

- [MGR-HOWTO](#), *The MGR Window System HOWTO*

*Updated: May 1996.* Information on the installation, configuration and running of the MGR Window System.

- [MILO-HOWTO](#), *Alpha Miniloader HOWTO*

*Updated: November 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.

- [MIPS-HOWTO](#), *Linux/MIPS HOWTO*

*Updated: January 2001.* Describes the MIPS port of the Linux operating system, common problems and their solutions, availability and more.

- [Modem-HOWTO](#), *The Linux Modem HOWTO*

*Updated: December 2000.* Help with selecting, connecting, configuring, trouble-shooting, and understanding modems for a PC.

- [MP3-HOWTO](#), *The Linux MP3 HOWTO*

*Updated: October 2000.* Describes the hardware, software and procedures needed to encode, play and stream MP3 sound files under Linux.

- [Multi-Disk-HOWTO](#), *HOWTO: Multi Disk System Tuning*

*Updated: July 2000.* How best to use multiple disks and partitions for a Linux system.

- [Multicast-HOWTO](#), *Multicast over TCP/IP HOWTO*

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

- [MultiOS-HOWTO](#), *Managing Multiple Operating Systems HOWTO*

*Updated: February 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: February 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: November 2000.* 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: September 1999.* Describes how to hook up a NCD ThinSTAR to your local network using a Linux box as server.

- [Net-HOWTO](#), *Linux Networking HOWTO*

*Updated: July 2000.* Information about networking for Linux (relates only to version 4 of the Linux Networking Kernel or more specifically kernel releases 2.x and 2.2.x).

Previously called the Net 3/4 and Net–3 HOWTOs.

- [NetMeeting–HOWTO](#), *Linux NETMEETING HOWTO*

*Updated: January 2001.* Describes how to make Microsoft NetMeeting interoperate with Linux.

- [Networking–Overview–HOWTO](#), *The Linux Networking Overview HOWTO*

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

- [NFS–HOWTO](#), *NFS HOWTO*

*Updated: December 2000.* How to set up NFS clients and servers.

- [NIS–HOWTO](#), *The Linux NIS(YP)/NYS/NIS+ HOWTO*

*Updated: November 2000.* 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: August 2000.* How to develop NetWare Loadable Modules under Linux, using GNU CC and nlmconv(1) from GNU binutils.

- [Online–Troubleshooting–HOWTO](#), *Online Troubleshooting Resources HOWTO*

*Updated: July 2000.* Directs Linux users to resources available on the Internet that provide access to a vast amount of Linux–related information useful in troubleshooting problems.

- [Optical–Disk–HOWTO](#), *Linux – Optical Disk HOWTO*

*Updated: December 1998.* Describes the installation and configuration of optical disk drives for Linux.

- [Oracle–7–HOWTO](#), *Oracle 7 Database HOWTO*

*Updated: August 1998.* A guide to installing and configuring the Oracle 7 Database Server on a Linux system.

- [Oracle–8–HOWTO](#), *Oracle (8) for Linux Installation HOWTO*

*Updated: June 2000.* A guide to installing and configuring the Oracle 8i Enterprise Edition for Linux.

- [PalmOS–HOWTO](#), *Palm OS Desktop HOWTO*

*Updated: February 1999.* Explains how to use your Palm OS device with a Linux system.



- [Parallel-Processing-HOWTO](#), *Linux Parallel Processing HOWTO*

*Updated: January 1998.* 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.

- [PCI-HOWTO](#), *Linux PCI-HOWTO*

*Updated: March 1997.* Information on what works with Linux and PCI-boards and what does not.

- [PCMCIA-HOWTO](#), *Linux PCMCIA HOWTO*

*Updated: September 2000.* How to install and use PCMCIA Card Services for Linux.

- [phhttpd-HOWTO](#), *PHHTTPD*

*Updated: January 2000.* 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*

*Updated: January 2001.* How to develop PHP programs and also to migrate all the Windows 95 GUI applications to powerful PHP + HTML + DHTML + XML + Java applets + Javascript. Applies to all the operating systems where PHP is ported.

- [PLIP-Install-HOWTO](#), *PLIP Install HOWTO*

*Updated: August 2000.* How to install a GnuXXPIELinux 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: November 2000.* How to get your Linux system to support Plug-and-Play.

- [Polish-HOWTO](#), *Polish HOWTO*

*Updated: February 1999.* Addresses Linux localization issues specific to Polish users (written in Polish).

- [Portuguese-HOWTO](#), *Portuguese HOWTO*

*Updated: December 1999.* Addresses Linux localization issues specific to Portuguese users (written in Portuguese).

- [PostgreSQL-HOWTO](#), *Database-SQL-RDBMS HOWTO for Linux (PostgreSQL Object Relational Database System)*

*Updated: January 2001.* A "practical guide" to very quickly setup a SQL Database engine and front end tools on a Unix system.

- [PPP-HOWTO](#), *Linux PPP HOWTO*

*Updated: July 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.

- [Printing-HOWTO](#), *The Linux Printing HOWTO*

*Updated: September 2000.* 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: February 1998.* How to use the print system under Linux.

- [Process-Monitor-HOWTO](#), *Process Monitor HOWTO for Linux*

*Updated: January 2001.* How to monitor Linux/Unix processes and to re-start them automatically if they die (without any manual intervention).

- [Program-Library-HOWTO](#), *Program Library HOWTO*

*Updated: December 2000.* This HOWTO for programmers discusses how to create and use program libraries on Linux. This includes static libraries, shared libraries, and dynamically loaded libraries.

- [Psion-HOWTO](#), *Linux and Psion HOWTO*

*Updated: November 1999.* How to use Psion palmtops with Linux. Does not cover running Linux on a Psion palmtop.

- [Qmail-VMailMgr-Courier-imap-HOWTO](#), *Qmail VMailMgr and Courier-Imap HOWTO*

*Updated: April 2000.* 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: August 1998.* How to install, run and troubleshoot Quake, QuakeWorld and Quake II on an Intel Linux system.

- [Reading-List-HOWTO](#), *The Linux Reading List HOWTO*

*Updated: September 2000.* 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: March 2000.* How to make your own CDs from the Red Hat Linux distribution equivalent to the ones commercially available from Red Hat.

- [Root-RAID-HOWTO](#), *Root RAID HOWTO cookbook*

*Updated: July 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 improvement 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: November 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.

- [SCSI-2.4-HOWTO](#), *The Linux SCSI subsystem in 2.4 HOWTO*

*Updated: January 2001.* 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-Programming-HOWTO](#), *The Linux SCSI programming HOWTO*

*Updated: May 1996.* Deals with programming the Linux generic SCSI interface.

- [Secure-Programs-HOWTO](#), *Secure Programming for Linux and Unix HOWTO*

*Updated: January 2001.* Provides a set of design and implementation guidelines for writing secure programs for Linux and Unix systems.

- [Security-HOWTO](#), *Linux Security HOWTO*

*Updated: March 2000.* A general overview of security issues that face the administrator of Linux systems.

- [Serbian-HOWTO](#), *Serbian HOWTO*

*Updated: November 1998.* Addresses Linux localization issues specific to Serbian users (written in Serbian).

- [Serial-HOWTO](#), *The Linux Serial HOWTO*

*Updated: October 2000.* 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: August 2000.* Details how to setup a laplink connection between two computers.

- [Serial-Programming-HOWTO](#), *The Linux Serial Programming HOWTO*

*Updated: January 1998.* How to program communications with devices over a serial port on a Linux box.

- [Shadow-Password-HOWTO](#), *Linux Shadow Password HOWTO*

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

- [Slovenian-HOWTO](#), *Slovenian HOWTO*

*Updated: February 1999.* Addresses Linux localization issues specific to Slovenian users (written in Slovenian).

- [SMB-HOWTO](#), *SMB HOWTO*

*Updated: April 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: October 2000.* Reviews main issues related to SMP configuration under Linux.

- [Software-Building-HOWTO](#), *Building and Installing Software Packages for Linux*

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

- [Software-RAID-HOWTO](#), *Software-RAID HOWTO*

*Updated: January 2000 (latest version).* 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 than the older RAID support already in those kernels.

- [Software-RAID-0.4x-HOWTO](#), *Software-RAID HOWTO (earlier implementation)*

*Updated: November 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: August 2000.* Describes good release practices for Linux open-source projects.

- [Sound-HOWTO](#), *The Linux Sound HOWTO*

*Updated: March 1999.* Describes sound support for Linux (hardware, configuration, etc).

- [Sound-Playing-HOWTO](#), *The Linux Sound Playing HOWTO*

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

- [Spanish-HOWTO](#), *Spanish Linux HOWTO*

*Updated: August 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: November 2000.* Describes Linux on SPARC-based workstations.

- [Speech-Recognition-HOWTO](#), *Speech Recognition HOWTO*

*Updated: November 2000.* 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.

- [SRM-HOWTO](#), *SRM Firmware HOWTO*

*Updated: November 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-RedHat-HOWTO](#), *Building a Secure RedHat Apache Server HOWTO*

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

- [Tango-HOWTO](#), *Tango 2000 HOWTO*

*Updated: July 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: November 1998.* Describes the Linux approach to Tcl, a scripting language.

- [TeTeX-HOWTO](#), *The teTeX HOWTO: The Linux-teTeX Local Guide*

*Updated: November 1998.* Covers the basic installation and usage of the teTeX TeX and LaTeX implementation, plus auxiliary packages like Ghostscript.

- [Text-Terminal-HOWTO](#), *The Linux Text-Terminal HOWTO*

*Updated: January 2001.* 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: August 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: November 1999.* How to turn inexpensive legacy computers into fast terminals.

- [Tips-HOWTO](#), *The Linux Tips HOWTO*

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

- [Turkish-HOWTO](#), *Turkish HOWTO*

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

- [UMSDOS-HOWTO](#), *UMSDOS HOWTO*

*Updated: November 1995.* Explains how to use Umsdos (a linux file system) in different configurations, and its operation.

- [Unicode-HOWTO](#), *The Unicode HOWTO*

*Updated: August 2000.* 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: August 2000.* Describes the working basics of PC-class computers, Unix-like operating systems, and the Internet in non-technical language.

- [UPS-HOWTO](#), *The UPS HOWTO*

*Updated: November 1997.* Helps you connect an uninterruptable power supply to a Linux box.

- [User-Authentication-HOWTO](#), *User Authentication HOWTO*

*Updated: May 2000.* 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: April 1998.* A guide to founding, maintaining, and growing a Linux User Group.

- [UUCP-HOWTO](#), *The Linux UUCP HOWTO*

*Updated: February 1998.* Describes the setup, care & feeding of UUCP under Linux.

- [VAR-HOWTO](#), *Linux VAR HOWTO*

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

- [Vim-HOWTO](#), *Vim Color Editor HOWTO (Vi Improved w/syntax color highlighting)*

*Updated: December 2000.* A guide to very quickly setup Vim color editor on Linux or Unix systems.

- [Virtual-Services-HOWTO](#), *Virtual Services HOWTO*

*Updated: August 1998.* How to virtualize a service.

- [VMailMgr-HOWTO](#), *VMailMgr HOWTO*

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

- [VME-HOWTO](#), *VME HOWTO*

*Updated: August 2000.* 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: September 1999.* Aimed at all those who have been using VMS and now need or want to switch to Linux.

- [VoIP-HOWTO](#), *VoIP Howto*

*Updated: November 2000.* 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: December 1999.* How to set up a Virtual Private Network with Linux.

- [VPN-Masquerade-HOWTO](#), *Linux VPN Masquerade HOWTO*

*Updated: October 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: December 2000.* Installation of (not only) Wacom graphic tablets under linux and/or xfree86.

- [Wearable-HOWTO](#), *Wearable HOWTO*

*Updated: November 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.

- [Windows-LAN-Server-HOWTO](#), *Windows LAN server HOW-TO*



*Updated: September 2000.* 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.

- [Winmodems-and-Linux-HOWTO](#), *Winmodems-and-Linux HOWTO*

*Updated: April 2000.* Helps users having a Winmodem for getting it working under Linux.

- [Wireless-HOWTO](#), *Wireless HOWTO for Linux Systems*

*Updated: January 2001.* Document explains how to setup Wireless in Linux, compatibility problems, something about geographic requirements and more.

- [WWW-HOWTO](#), *Linux WWW HOWTO*

*Updated: August 1999.* Information about setting up WWW services under Linux (both server and client).

- [WWW-mSQL-HOWTO](#), *A mSQL and perl Web Server HOWTO*

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

- [XDMCP](#), *Linux XDMCP HOWTO*

*Updated: November 2000.* How to setup XDMCP ( "X Display Manager Control Protocol").

- [XFree86-HOWTO](#), *The Linux XFree86 HOWTO*

*Updated: August 2000.* How to obtain, install, and configure version 4.0 of the XFree86 version of the X Window System (X11R6) for Linux systems.

- [XFree86-Touch-Screen-HOWTO](#), *Linux Touch Screen HOWTO*

*Updated: October 2000.* How to set up a touch screen input device under XFree86.

- [XFree86-Video-Timings-HOWTO](#), *XFree86 Video Timings HOWTO*

*Updated: August 2000.* How to compose a mode line for your card/monitor combination under XFree86.

- [Xinerama-HOWTO](#), *Using the Xinerama Extensions to MultiHead X v.4.0*

*Updated: November 2000.* How to configure XFree86 Version 4.0 with Multiple monitors and the Xinerama extentions.

- [XML-RPC-HOWTO](#), *XML-RPC HOWTO*

*Updated: January 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.



- [XWindow-User-HOWTO](#), *The X Window User HOWTO*

*Updated: September 1999.* Information on configuring the X Window environment for the Linux user, as well as for the beginning system administrator attempting to sort through the many configuration options and details of X Window.

---

# Chapter 6. Single list of mini-HOWTOs

The following Linux mini-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.

- [ADSL](#), *ADSL HOWTO for Linux Systems*

*Replaced by the [DSL HOWTO for Linux](#), Sept 2000.*

- [ADSM-Backup](#), *Linux ADSM mini-HOWTO*

*Updated: January 1997.* How to install and use a client for the commercial ADSM backup system for Linux/i386.

- [Advocacy](#), *Linux Advocacy mini-HOWTO*

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

- [Alsa-sound](#), *Alsa-sound-mini-HOWTO*

*Updated: November 1999.* Describes the installation of the ALSA sound drivers for Linux.

- [Apache-mods](#),  
*Apache+DSO+mod\_ssl+mod\_perl+php+mod\_auth\_nds+mod\_auth\_mysql+mod\_fastcgi  
mini-HOWTO*

*Updated: April 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: July 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.

- [Automount](#), *Automount mini-HOWTO*

*Updated: April 1999.* Describes the autofs automounter, how to configure it; points out some problems to avoid.

- [BackspaceDelete](#), *Linux Backspace/Delete mini-HOWTO*

*Updated: December 2000.* Solutions for having working Backspace and Delete keys on the console and on X.

- [Backup-With-MSDOS](#), *Backup-With-MSDOS mini-HOWTO*

*Updated: August 1997.* How to use a Linux-compatible tape drive installed on an MS-DOS machine to back up the filesystem of a Linux machine.

- [Battery-Powered](#), *Battery Powered Linux Mini-HOWTO*

*Updated: December 1997.* How to reduce a Linux system's power consumption by tweaking some of its configuration settings.

- [Boca](#), *Installing Boca Card Mini-HOWTO*

*Updated: January 2001.* Describes the basics of a Boca 16-port serial card (Boca 2016) with Linux.

- [BogoMips](#), *BogoMips mini-HOWTO*

*Updated: November 2000.* Some information about BogoMips, compiled from various sources.

- [Bridge](#), *Bridging mini-HOWTO*

*Updated: September 1998.* Describes how to setup an ethernet bridge.

- [Bridge+Firewall](#), *Linux Bridge+Firewall Mini-HOWTO*

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

- [Bridge+Firewall+DSL](#), *Bridge + Firewall + DSL Mini-HOWTO*

*Updated: November 2000.* Configuring a Linux system to act as a firewall and bridge with a DSL network connection.

- [BTTV-Mini-HOWTO-0.3](#), *The BTTV Mini-HOWTO*

*Updated: February 2000.* Describes the hardware, software, and procedures needed to use a bt8x8 chipset based frame grabber or TV tuner card under Linux.

- [Bzip2](#), *Bzip2 mini-HOWTO*

*Updated: August 1999.* How to use the new bzip2 compression program.

- [call-back](#), *call-back mini HOWTO*

*Updated: June 2000.* How to set up call-back by using the Linux system and modem.

- [Cipe+Masq](#), *The Linux Cipe+Masquerading mini-HOWTO*

*Updated: April 1999.* How to setup a VPN using Cipe on a linux masquerading firewall.

- [Clock](#), *The Clock Mini-HOWTO*

*Updated: November 2000.* How to set and keep your computer's clock on time.

- [Coffee](#), *COFFEE-HOWTO*

*Updated: November 2000.* Yes, Linux DOES make coffee, and it tastes good.

- [Commercial-Port-Advocacy](#), *Commercial Port Advocacy mini-HOWTO*

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

- [Compressed-TCP](#), *Compressed TCP/IP-Sessions using SSH-like tools*

*Updated: April 2000.* Discusses how to compress data streams.

- [DHCP](#), *DHCP mini-HOWTO*

*Updated: October 2000.* Answers basic questions on how to set up your Linux box to serve as a DHCP server or a DHCP client.

- [Divert-Sockets-mini-HOWTO](#), *Divert Sockets mini-HOWTO*

*Updated: February 2000.* Describes how to get, compile and use FreeBSD divert sockets under Linux 2.2.12.

- [DocBook-Install](#), *DocBook Install mini-HOWTO*

*Updated: January 2001.* 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.

- [Domain](#), *Setting Up Your New Domain Mini-HOWTO*

*Updated: October 2000.* Outlines the things you will probably have to do when you want to set up a network of computers under your own domain.

- [DPT-Hardware-RAID](#), *Linux DPT Hardware RAID HOWTO*

*Updated: April 1999.* How to set up hardware RAID under Linux.

- [Ext2fs-Undeletion](#), *Linux Ext2fs Undeletion mini-HOWTO*

*Updated: February 1999.* Presents a discussion of how to retrieve deleted files from a Second Extended File System.

- [Ext2fs-Undeletion-Dir-Struct](#), *Ext2fs Undeletion of Directory Structures*

*Updated: November 2000.* Describes a straight forward way of recovering whole directory structures, instead of file by file, that have been removed by a misplaced `rm -rf`

- [Fax-Server](#), *Linux simple fax printer server mini-HOWTO (faxsrv-mini-HOWTO)*

*Updated: November 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: December 2000.* Covers the installation and use of the most popular amateur packet-radio BBS software FBB.

- [Firewall-Piercing](#), *Firewall Piercing mini-HOWTO*

*Updated: November 2000.* Directions for using ppp over telnet to do network activities transparently through an Internet firewall.

- [Font-Deuglification-mini-HOWTO](#), *XFree86 Font Deuglification Mini HOWTO*

*Updated: October 2000.* How to fix ugly and unreadable X Window fonts.

- [FTP](#), *FTP mini-HOWTO*

*Updated: January 2000.* How to use ftp clients and servers

- [GIS-GRASS](#), *GIS-GRASS mini-HOWTO*

*Updated: November 1997.* How to acquire, install and configure a powerful scientific public-domain Geographic Information System (GIS): the Geographic Resources Analysis Support System (GRASS).

- [Handspring-Visor](#), *Handspring-Visor mini-HOWTO*

*Updated: August 2000.* Using the Visor with Linux and your USB port.

- [Hard-Disk-Upgrade](#), *Hard Disk Upgrade Mini HOWTO*

*Updated: April 2000.* How to copy a Linux system from one hard disk to another.

- [Home-Network-mini-HOWTO](#), *Red Hat Linux 6. X as an Internet Gateway for a Home Network*

*Updated: June 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.

- [Install-From-ZIP](#), *Linux Install From PPA-Zip drive mini-HOWTO*

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

- [Intkeyb](#), *How to setup international keyboard in X Windows*

*Updated: February 2001.* 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.

- [IO-Port-Programming](#), *Linux I/O port programming mini-HOWTO*

*Updated: December 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-Subnetworking](#), *IP Sub-Networking mini-HOWTO*

*Updated: March 1997.* Describes why and how to subnetwork an IP network – that is using a single A, B or C Class network number to function correctly on several interconnected networks.

- [IP-Alias](#), *Setting Up IP Aliasing On A Linux Machine Mini-HOWTO*

*Updated: January 2001.* How to set up and run IP aliasing on a Linux box.

- [IPMasquerading+Napster](#), *IPMasquerading+Napster mini-HOWTO*

*Updated: April 2000.* Present a way to allow users behind an IPMasq'd system to use Napster.

- [IRC](#), *Linux IRC mini-HOWTO*

*Updated: January 2001.* Describes the basics of IRC and respective applications for Linux.

- [ISP-Connectivity](#), *ISP-Connectivity mini-HOWTO*

*Updated: November 1997.* How to setup PPP, connect up to your ISP, configure mail and news, get a permanent IP (if available), get a domain name, and have a bona fide system running in a little over thirty minutes.

- [KernelD](#), *The Linux kernelD mini-HOWTO*

*Updated: May 2000.* Explains how you can use the kernelD function in the Linux kernels.

- [LBX](#), *The LBX mini-HOWTO*

*Updated: December 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.

- [Leased-Line](#), *Leased line mini-HOWTO*

*Updated: August 2000.* Configuring your modem and pppd to use a 2 wire twisted pair leased line.

- [Lego](#), *Lego Mindstorm with Linux Mini-HOWTO*

*Updated: October 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.

- [LILO](#), *Lilo mini-HOWTO*

*Updated: November 2000.* 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+DOS+Win95+OS2](#), *The Linux ``Linux-DOS-Win95-OS2" mini-HOWTO*  
  
*Updated: November 1997.* Presents a procedure to make 4 operating systems co-exist on a single hard disk.
- [LinuxGL-QuakeWorld-mini-HOWTO](#), *LinuxGL (GLX) QuakeWorld Client compile mini-HOWTO*  
  
*Updated: January 2001.* How to get the OpenGL/GLX Linux QuakeWorld client compiled and working on systems with standard OpenGL hardware acceleration support.
- [Linux+FreeBSD](#), *The Linux+FreeBSD mini-HOWTO*  
  
*Updated: March 2000.* How to use Linux and FreeBSD on the same system.
- [Linux-Modem-Sharing](#) *Linux Modem sharing mini-HOWTO*  
  
*Updated: February 1997.* 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+NT-Loader](#), *NT OS Loader + Linux mini-HOWTO*  
  
*Updated: September 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: April 2000.* Describes how to use Solaris and Linux together on one machine. It addresses common questions like multibooting and file-sharing.
- [Linux+Win95](#), *Yes my Children, it CAN be DONE!*  
  
*Updated: April 1996.* Installing both Linux and Windows 95 on your PC.
- [Linux+WinNT](#), *Linux+WindowsNT mini-HOWTO*  
  
*Updated: November 2000.* 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.
- [Loadlin+Win95-98-ME](#), *The Loadlin+Win95/98/ME mini-HOWTO*  
  
*Updated: January 2001.* Describes how to use Loadlin with Windows 95/98/ME to boot to Linux.
- [Loopback-Root-FS](#), *The Loopback Root Filesystem HOWTO*  
  
*Updated: September 1999.* How to use the Linux loopback device to create a Linux native filesystem format installation that can be run from a DOS partition without re-partitioning.
- [Mac-Terminal](#), *The MacTerminal mini-HOWTO*  
  
*Updated: November 1997.* How to configure the Mac for use as a Linux terminal.

- [Mail-Queue](#), *Linux Mail-Queue mini-HOWTO*

*Updated: September 1997.* 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: November 2000.* How to feed a mailing list to a news server.

- [Man-Page](#), *The Linux Man Page mini-HOWTO*

*Updated: January 2000.* 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.

- [Modules](#), *Linux Modules Installation mini-HOWTO*

*Updated: n/a* How to successfully set up Linux with modules configured and working.

- [Multiboot-with-GRUB](#), *Multiboot with GRUB Mini-HOWTO*

*Updated: January 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: March 1998.* How to multiboot between Windows 95, Windows NT, and Linux.

- [NCD-X-Terminal](#), *NCD X terminal mini HOWTO*

*Updated: March 2000.* How to connect an NCD X terminal to a UNIX host.

- [Netrom-Node](#), *Netrom-Node mini-Howto*

*Updated: October 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: August 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. . .

- [News-Leafsite](#), *News Leafsite mini-HOWTO*

*Updated: January 1998.* This will help you to configure a small leafsite for Usenet News using the free software package Leafnode.

- [NFS-Root](#), *NFS-Root mini-HOWTO*



*Updated: August 1997.* 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: February 1999.* How to create client root directories on a server that is using NFS Root mounted clients.

- [Nvidia-OpenGL-Configuration](#), *Nvidia OpenGL Configuration mini-HOWTO*

*Updated: January 2001.* 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 (offline mailaddr with 1 account)*

*Updated: June 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: January 2001.* Covers conversion of old email in Microsoft Outlook (not Outlook Express!) to typical Unix file formats.

- [Partition](#), *Linux Partition HOWTO*

*Updated: September 2000.* Teaches you how to plan and layout disk space for your Linux system.

- [Partition-Rescue-mini-HOWTO](#), *The Linux Partition-Rescue mini-HOWTO*

*Updated: July 2000.* Describes how to rescue your Linux partition if M\$-DOG has deleted it for you.

- [Path](#), *PATH HOWTO*

*Updated: November 1997.* Describes common tricks and problems with Unix / Linux environment variables, especially with PATH variable.

- [PLIP](#), *LINUX PLIP mini-HOWTO*

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

- [PortSlave](#), *PortSlave How-To using the Linux Router*

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

- [Pre-Installation-Checklist](#), *Linux pre-installation checklist*

*Updated: November 2000.* An aide-memoire which may make installation of Linux a pleasant experience for you.

- [Process-Accounting](#), *How To Enable Process Accounting on Linux*

*Updated: August 1997.* Describes how to enable system process accounting on a Linux host, and the usage of various process accounting commands

- [Programming-Languages](#), *Programming Languages mini-HOWTO*

*Updated: July 2000.* A brief comparison of major programming languages for Linux and major libraries for creating graphical user interfaces (GUIs) under Linux.

- [Proxy-ARP-Subnet](#), *ProxyARP Subnetting HOWTO*

*Updated: August 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.

- [Public-Web-Browser](#), *Linux web browser station*

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

- [Qmail+MH](#), *mini-HOWTO install qmail with MH*

*Updated: March 1998.* Installation experiences to offer some help to other users who wish to use this combination for their email.

- [Quota](#), *Quota mini-HOWTO*

*Updated: August 1997.* 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: August 1997.* Covers basic installation and usage of RCS, the GNU Revision Control System, under Linux.

- [Remote-Boot](#), *Linux Remote-Boot mini-HOWTO: Configuring Remote-Boot Workstations with Linux, DOS, Windows 95/98 and Windows NT*

*Updated: February 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: January 2001.* How to run remote X applications.

- [RPM+Slackware](#), *RPM+Slackware Mini-Howto*

*Updated: April 1998.* How to get RPM installed and working properly under Slackware.

- [Saving-Space](#), *Saving Space mini-HOWTO*

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

- [Secure-POP+SSH](#), *Secure POP via SSH mini-HOWTO*

*Updated: September 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.

- [SLIP-PPP-Emulator](#), *SLIP/PPP Emulator HOWTO*

*Updated: August 1997.* Describes how to get your Linux box to connect to a generic site via a SLIP/PPP emulator, such as SLiRP or TIA.

- [Small-Memory](#), *Small Memory Mini-HOWTO*

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

- [Soundblaster-AWE](#), *Sound Blaster AWE 32/64 HOWTO*

*Updated: January 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.

- [StarOffice](#), *StarOffice 3.1 Mini-HOWTO*

*Updated: November 1999.* Information on installing the StarOffice 3.1 Office Suite by StarDivision.

- [Swap-Space](#), *Linux Swap Space Mini-HOWTO*

*Updated: January 2000.* How to share your Linux swap partition with Windows.

- [Term-Firewall](#), *Using Term to Pierce an Internet Firewall*

*Updated: July 1996.* Directions for using ``term'' to do network stuff through a TCP firewall that you're not supposed to be able to.

- [TkRat](#), *TkRat mini-HOWTO*

*Updated: September 1999.* Geared toward anyone interested in using their Linux computer to send and receive Internet E-Mail.

- [Token-Ring](#), *Token-Ring mini-HOWTO*

*Updated: January 1998.* Designed to help you install the kernel patch and also try to point out some things to look for.

- [TransparentProxy](#), *Transparent Proxy with Squid mini-HOWTO*

*Updated: January 2001.* 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: January 2000.* How to configure a Debian system to use TrueType fonts for display and printing.

- [Ultra-DMA](#), *The Linux Ultra-DMA Mini-Howto*

*Updated: November 1999.* How to use Ultra-DMA aka Ultra-ATA aka Ultra33 and Ultra66 hard drives and interfaces with Linux.

- [Update](#), *The Staying Updated mini-HOWTO*

*Updated: October 2000.* 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: June 1996.* Hints and tips on upgrading from one linux distribution to another.

- [VAIO+Linux](#), *Linux on Sony VAIO mini-HOWTO*

*Updated: September 1998.* This document explains installation of Linux on Sony VAIO computers.

- [Visual-Bell](#), *Visible bell mini-Howto*

*Updated: November 1997.* How to use termcap to configure a visual bell on one's system and describes how to disable audible bells on demand.

- [VPN](#), *The VPN HOWTO*

*Updated: August 1997.* How to setup a Virtual Private Network.

- [Wacom-USB-mini-HOWTO](#), *Wacom Graphire USB Mini-HOWTO*

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

- [WordPerfect](#), *WordPerfect Mini-howto*

*Updated: August 1997.* Discusses running WordPerfect on Linux, including a brief discussion on the WordPerfect 7.0 beta.

- [X-Big-Cursor](#), *X11-big-cursor mini-HOWTO*

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

- [XDM-Xterm](#), *XDM and X Terminal mini-HOWTO*

*Updated: November 2000.* 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 do for X terminals.

- [XFree86-XInside](#), *Linux XFree-to-Xinside mini-HOWTO*

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

- [Xterm-Title](#), *How to change the title of an xterm*

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

- [ZIP-Drive](#), *Zip Drive Mini-HOWTO*

*Updated: January 1999.* Provides a quick reference guide 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: January 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 7. Special HOWTOs

The *High Availability HOWTO*, by Harald Milz <hm@seneca.muc.de> is available at <http://metalab.unc.edu/pub/Linux/ALPHA/linux-ha/High-Availability-HOWTO.html>. It is not included with the HOWTO collection because it relies on figures and cannot be distributed in all supported formats.

---

## Chapter 8. Unmaintained HOWTOs

There are a number of unmaintained documents, which can be found at:

<http://metalab.unc.edu/pub/Linux/docs/HOWTO/unmaintained/>.

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 old programs (for example UUCP HOWTO) or not-so-hot topics (for example AX-25 HOWTO).

---

# Chapter 9. Writing and Submitting a HOWTO

If you are interested in writing or maintaining a HOWTO, please contact us *FIRST* at [feedback@linuxdoc.org](mailto:feedback@linuxdoc.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. Refer to the [LDP Author Guide](#) for further information.
- Use other HOWTOs a model. The SGML 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 [Using DocBook HOWTO](#).
- 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 Linux HOWTO Index by Tim Bynum v6.1, 1 December 2000

- Lastly, be prepared to receive questions and comments about your writing. There are several hundreds of accesses to thei HOWTO collection every day from around the world!

After you have written the HOWTO, mail the SGML source to us at [submit@linuxdoc.org](mailto:submit@linuxdoc.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 10. Copyright

Copyright (c) 1995 – 2000 by Tim Bynum. Copyright (c) 2000 by Guylhem Aznar / Greg Ferguson / Joshua Drake

Unless otherwise stated, Linux HOWTO documents are copyrighted by their respective authors. Linux HOWTO documents may be reproduced and distributed in whole or in part, in any medium physical or electronic, as long as this copyright notice is retained on all copies. Commercial redistribution is allowed and encouraged; however, the author would like to be notified of any such distributions.

All translations, derivative works, or aggregate works incorporating any Linux HOWTO documents must be covered under this copyright notice. That is, you may not produce a derivative work from a HOWTO and impose additional restrictions on its distribution. Exceptions to these rules may be granted under certain conditions; please contact the Linux HOWTO coordinator at the address given below.

In short, we wish to promote dissemination of this information through as many channels as possible. However, we do wish to retain copyright on the HOWTO documents, and would like to be notified of any plans to redistribute the HOWTOs.

If you have questions, please contact the Linux HOWTO coordinator, at [linux-howto@metalab.unc.edu](mailto:linux-howto@metalab.unc.edu) via email.