

Linux Kernel In A Nutshell In A Nutshell O'Reilly

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Everything you need to know about Linux is in this book. Written by Stephen Figgins, Ellen Siever, Robert Love, and Arnold Robbins -- people with years of active participation in the Linux community -- Linux in a Nutshell, Sixth Edition, thoroughly covers programming tools, system and network administration tools, the shell, editors, and LILO and GRUB boot loaders. This updated edition offers a tighter focus on Linux system essentials, as well as more coverage of new capabilities such as virtualization, wireless network management, and revision control with git. It also highlights the most important options for using the vast number of Linux commands. You'll find many helpful new tips and techniques in this reference, whether you're new to this operating system or have been using it for years. Get the Linux commands for system administration and network management Use hundreds of the most important shell commands available on Linux Understand the Bash shell command-line interpreter Search and process text with regular expressions Manage your servers via virtualization with Xen and VMware Use the Emacs text editor and development environment, as well as the vi, ex, and vim text-manipulation tools Process text files with the sed editor and the gawk programming language Manage source code with Subversion and git

To thoroughly understand what makes Linux tick and why it's so efficient, you need to delve deep into the heart of the operating system--into the Linux kernel itself. The kernel is Linux--in the case of the Linux operating system, it's the only bit of software to which the term "Linux" applies. The kernel handles all the requests or completed I/O operations and determines which programs will share its processing time, and in what order. Responsible for the sophisticated memory management of the whole system, the Linux kernel is the force behind the legendary Linux efficiency. The new edition of Understanding the Linux Kernel takes you on a guided tour through the most significant data structures, many algorithms, and programming tricks used in the kernel. Probing beyond the superficial features, the authors offer valuable insights to people who want to know how things really work inside their machine. Relevant segments of code are dissected and discussed line by line. The book covers more than just the functioning of the code, it explains the theoretical underpinnings for why Linux does things the way it does. The new edition of the book has been updated to cover version 2.4 of the kernel, which is quite different from version 2.2: the virtual memory system is entirely new, support for multiprocessor systems is improved, and whole new classes of hardware devices have been added. The authors explore each new feature in detail. Other topics in the book include: Memory management including file buffering, process swapping, and Direct memory Access (DMA) The Virtual Filesystem and the Second Extended Filesystem Process creation and scheduling Signals, interrupts, and the essential interfaces to device drivers Timing Synchronization in the kernel Interprocess Communication (IPC) Program execution Understanding the Linux Kernel, Second Edition will acquaint you with all the inner workings of Linux, but is more than just an academic exercise. You'll learn what conditions bring out Linux's best performance, and you'll see how it meets the challenge of providing good system response during process scheduling, file access, and memory management in a wide variety of environments. If knowledge is power, then this book will help you make the most of your Linux system.

In order to thoroughly understand what makes Linux tick and why it works so well on a wide variety of systems, you need to delve deep into the heart of the kernel. The kernel handles all interactions between the CPU and the external world, and determines which programs will share processor time, in what order. It manages limited memory so well that hundreds of processes can share the system efficiently, and expertly organizes data transfers so that the CPU isn't kept waiting any longer than necessary for the relatively slow disks. The third edition of Understanding the Linux Kernel takes you on a guided tour of the most significant data structures, algorithms, and programming tricks used in the kernel. Probing beyond superficial features, the authors offer valuable insights to people who want to know how things really work inside their machine. Important Intel-specific features are discussed. Relevant segments of code are dissected line by line. But the book covers more than just the functioning of the code; it explains the theoretical underpinnings of why Linux does things the way it does. This edition of the book covers Version 2.6, which has seen significant changes to nearly every kernel subsystem, particularly in the areas of memory management and block devices. The book focuses on the following topics: Memory management, including file buffering, process swapping, and Direct memory Access (DMA) The Virtual Filesystem layer and the Second and Third Extended Filesystems Process creation and scheduling Signals, interrupts, and the essential interfaces to device drivers Timing Synchronization within the kernel Interprocess Communication (IPC) Program execution Understanding the Linux Kernel will acquaint you with all the inner workings of Linux, but it's more than just an academic exercise. You'll learn what conditions bring out Linux's best performance, and you'll see how it meets the challenge of providing good system response during process scheduling, file access, and memory management in a wide variety of environments. This book will help you make the most of your Linux system.

Presents an overview of kernel configuration and building for version 2.6 of the Linux kernel.

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A guide to the operating system covers such topics as system preferences, using Finder and Dock, the FileVault system, Unix commands, and CVS.

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LPI Linux Certification in a Nutshell,Second Edition is an invaluable resource for determining what you need to practice to pass the Linux Professional Institute exams. This book will help you

determine when you're ready to take the exams, which are technically challenging and designed to reflect the skills that administrators need in real working environments. As more corporations adopt Linux as the networking backbone for their IT systems, the demand for certified technicians will become even greater. Passing the LPI exams will broaden your career options because the LPI is the most widely known and respected Linux certification program in the world. Linux Journal recognized the LPI as the best Training and Certification Program. The exams were developed by the Linux Professional Institute, an international, volunteer-driven organization with affiliates in a dozen countries. The core LPI exams cover two levels. Level 1 tests a basic knowledge of Linux installation, configuration, and command-line skills. Level 2 goes into much more depth regarding system troubleshooting and network services such as email and the Web. The second edition of LPI Linux Certification in a Nutshell is a thoroughly researched reference to these exams. The book is divided into four parts, one for each of the LPI exams. Each part features not only a summary of the core skills you need, but sample exercises and test questions, along with helpful hints to let you focus your energies. Major topics include: GNU and Unix commands Linux installation and package management Devices, filesystems, and kernel configuration Text editing, processing, and printing The X Window System Networking fundamentals and troubleshooting Security, including intrusion detection, SSH, Kerberos, and more DNS, DHCP, file sharing, and other networking infrastructure Email, FTP, and Web services Praise for the first edition: "Although O'Reilly's Nutshell series are intended as 'Desktop Reference' manuals, I have to recommend this one as a good all-round read; not only as a primer for LPI certification, but as an excellent introductory text on GNU/Linux. In all, this is a valuable addition to O'Reilly's already packed stable of Linux titles and I look forward to more from the author." --First Monday

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Linux consistently turns up high in the list of popular Internet servers, whether it's for the Web, anonymous FTP, or general services like DNS and routing mail. But security is uppermost on the mind of anyone providing such a service. Any server experiences casual probe attempts dozens of times a day, and serious break-in attempts with some frequency as well. As the cost of broadband and other high-speed Internet connectivity has gone down, and its availability has increased, more Linux users are providing or considering providing Internet services such as HTTP, Anonymous FTP, etc., to the world at large. At the same time, some important, powerful, and popular Open Source tools have emerged and rapidly matured--some of which rival expensive commercial equivalents--making Linux a particularly appropriate platform for providing secure Internet services. Building Secure Servers with Linux will help you master the principles of reliable system and network security by combining practical advice with a firm knowledge of the technical tools needed to ensure security. The book focuses on the most common use of Linux--as a hub offering services to an organization or the larger Internet--and shows readers how to harden their hosts against attacks. Author Mick Bauer, a security consultant, network architect, and lead author of the popular Paranoid Penguin column in Linux Journal, carefully outlines the security risks, defines precautions that can minimize those risks, and offers recipes for robust security. The book does not cover firewalls, but covers the more common situation where an organization protects its hub using other systems as firewalls, often proprietary firewalls. The book includes: Precise directions for securing common services, including the Web, mail, DNS, and file transfer. Ancillary tasks, such as hardening Linux, using SSH and certificates for tunneling, and using iptables for firewalling. Basic installation of intrusion detection tools. Writing for Linux users with little security expertise, the author explains security concepts and techniques in clear language, beginning with the fundamentals. Building Secure Servers with Linux provides a unique balance of "big picture" principles that transcend specific software packages and version numbers, and very clear procedures on securing some of those software packages. An all-inclusive resource for Linux users who wish to harden their systems, the book covers general security as well as key services such as DNS, the Apache Web server, mail, file transfer, and secure shell. With this book in hand, you'll have everything you need to ensure robust security of your Linux system.

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This easy-to-follow textbook/reference guides the reader through the creation of a fully functional embedded operating system, from its source code, in order to develop a deeper understanding of each component and how they work together. The text describes in detail the procedure for building the bootloader, kernel, filesystem, shared libraries, start-up scripts, configuration files and system utilities, to produce a GNU/Linux operating system. This fully updated second edition also includes new material on virtual machine technologies such as VirtualBox, Vagrant and the Linux container system Docker. Topics and features: presents an overview of the GNU/Linux system, introducing the components of the system, and covering aspects of process management, input/output and environment; discusses containers and the underlying kernel technology upon which they are based; provides a detailed examination of the GNU/Linux filesystem; explains how to build an embedded system under a virtual machine, and how to build an embedded system to run natively on an actual processor; introduces the concept of the compiler toolchain, and reviews the platforms BeagleBone and Raspberry Pi; describes how to build firmware images for devices running the Openwrt operating system. The hands-on nature and clearly structured approach of this textbook will appeal strongly to practically minded undergraduate and graduate level students, as well as to industry professionals involved in this area.

PART OF THE NEW JONES & BARTLETT LEARNING INFORMATION SYSTEMS SECURITY & ASSURANCE SERIES! Security Strategies in Linux Platforms and Applications covers every major aspect of security on a Linux system. Written by an industry expert, this book is divided into three natural parts to illustrate key concepts in the field. It opens with a discussion on the risks, threats, and vulnerabilities associated with Linux as an operating system using examples from Red Hat Enterprise Linux and Ubuntu. Part 2 discusses how to take advantage of the layers of security available to Linux—user and group options, filesystems, and security options for important services, as well as the security modules associated with AppArmor and SELinux. The book closes with a look at the use of both open source and proprietary tools when building a layered security strategy for Linux operating system environments. Using real-world examples and exercises, this useful resource incorporates hands-on activities to walk students through the fundamentals of security strategies related to the Linux system.

and needs. The author, a core kernel developer, shares valuable knowledge and experience on the 2.6 Linux kernel. Specific topics covered include process management, scheduling, time management and timers, the system call interface, memory addressing, memory management, the page cache, the VFS, kernel synchronization, portability concerns, and debugging techniques. This book covers the most interesting features of the Linux 2.6 kernel, including the CFS scheduler, preemptive kernel, block I/O layer, and I/O schedulers. The third edition of Linux Kernel Development includes new and updated material throughout the book: An all-new chapter on kernel data structures Details on interrupt handlers and bottom halves Extended coverage of virtual memory and memory allocation Tips on debugging the Linux kernel In-depth coverage of kernel synchronization and locking Useful insight into submitting kernel patches and working with the Linux kernel community

Find an introduction to the architecture, concepts and algorithms of the Linux kernel in Professional Linux Kernel Architecture, a guide to the kernel sources and large number of connections among subsystems. Find an introduction to the relevant structures and functions exported by the kernel to userland, understand the theoretical and conceptual aspects of the Linux kernel and Unix derivatives, and gain a deeper understanding of the kernel. Learn how to reduce the vast amount of information contained in the kernel sources and obtain the skills necessary to understand the kernel sources.

Complete overview of Mac OS Jaguar (Mac OS X 10.2) including basic system and network administration features, hundreds of tips and tricks, with an overview of Mac OS X's Unix text editors and CVS. ??????:????????,????????????,????????,????,???,????,????,????,??UML????,????,????????

As an open operating system, Unix can be improved on by anyone and everyone: individuals, companies, universities, and more. As a result, the very nature of Unix has been altered over the years by numerous extensions formulated in an assortment of versions. Today, Unix encompasses everything from Sun's Solaris to Apple's Mac OS X and more varieties of Linux than you can easily name. The latest edition of this bestselling reference brings Unix into the 21st century. It's been reworked to keep current with the broader state of Unix in today's world and highlight the strengths of this operating system in all its various flavors. Detailing all Unix commands and options, the informative guide provides generous descriptions and examples that put those commands in context. Here are some of the new features you'll find in Unix in a Nutshell, Fourth Edition Solaris 10, the latest version of the SVR4-based operating system, GNU/Linux, and Mac OS X Bash shell (along with the 1988 and 1993 versions of ksh) tsch shell (instead of the original Berkeley csh) Package management programs, used for program installation on popular GNU/Linux systems, Solaris and Mac OS X GNU Emacs Version 21 Introduction to source code management systems Concurrent versions system Subversion version control system GDB debugger As Unix has progressed, certain commands that were once critical have fallen into disuse. To that end, the book has also dropped material that is no longer relevant, keeping it taut and current. If you're a Unix user or programmer, you'll recognize the value of this complete, up-to-date Unix reference. With chapter overviews, specific examples, and detailed command.

This book is the comprehensive guide to Samba administration, officially adopted by the Samba Team. Wondering how to integrate Samba's authentication with that of a Windows domain? How to get Samba to serve Microsoft Dfs shares? How to share files on Mac OS X? These and a dozen other issues of interest to system administrators are covered. A whole chapter is dedicated to troubleshooting! The range of this book knows few bounds. Using Samba takes you from basic installation and configuration -- on both the client and server side, for a wide range of systems -- to subtle details of security, cross-platform compatibility, and resource discovery that make the difference between whether users see the folder they expect or a cryptic error message. The current edition covers such advanced 3.x features as: Integration with Active Directory and OpenLDAP Migrating from Windows NT 4.0 domains to Samba Delegating administrative tasks to non-root users Central printer management Advanced file serving features, such as making use of Virtual File System (VFS) plugins. Samba is a cross-platform triumph: robust, flexible and fast, it turns a Unix or Linux system into a file and print server for Microsoft Windows network clients. This book will help you make your file and print sharing as powerful and efficient as possible. The authors delve into the internals of the Windows activities and protocols to an unprecedented degree, explaining the strengths and weaknesses of each feature in Windows domains and in Samba itself. Whether you're playing on your personal computer or an enterprise network, on one note or a full three-octave range, Using Samba will give you an efficient and secure server.

Covering the LPI General Linux Exams 101 and 102, this helpful test preparation guidebook offers a detailed summary of each exam, along with hands-on exercises, extensive explanations and review, and practice exams. Original. (Intermediate/Advanced)

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