Linux Kernel Documentation

Practical C++ Programming thoroughly covers: C++ syntax · Coding standards and style · Creation and use of object classes · Templates · Debugging and optimization · Use of the C++ preprocessor · File input/output. This unique Linux networking tutorial reference provides students with a practical overview and understanding of the implementation of networking protocols in the Linux kernel. By gaining a familiarity with the Linux kernel architecture, students can modify and enhance the functionality of protocol instances. -- Provided by publisher. This book describes the design and implementation of the BSD operating system--previously known as the Berkeley version of UNIX. Today, BSD is found in nearly every variant of UNIX, and is widely used for Internet services and firewalls, timesharing, and multiprocessing systems. Readers involved in technical and sales support can learn the capabilities and limitations of the system; applications developers can learn effectively and efficiently how to interface to the system; systems programmers can learn how to maintain, tune, and extend the system. Written from the unique perspective of the system's architects, this book delivers the most comprehensive, up-to-date, and authoritative technical information on the

internal structure of the latest BSD system. As in the previous book on 4.3BSD (with Samuel Leffler), the authors first update the history and goals of the BSD system. Next they provide a coherent overview of its design and implementation. Then, while explaining key design decisions, they detail the concepts, data structures, and algorithms used in implementing the system's facilities. As an in-depth study of a contemporary, portable operating system, or as a practical reference, readers will appreciate the wealth of insight and guidance contained in this book. Highlights of the book: Details major changes in process and memory management Describes the new extensible and stackable filesystem interface Includes an invaluable chapter on the new network filesystem Updates information on networking and interprocess communication

“Probably the most wide ranging and complete Linux device driver book I’ve read.” --Alan Cox, Linux Guru and Key Kernel Developer “Very comprehensive and detailed, covering almost every single Linux device driver type.” --Theodore Ts’o, First Linux Kernel Developer in North America and Chief Platform Strategist of the Linux Foundation The Most Practical Guide to Writing Linux Device Drivers Linux now offers an exceptionally robust environment for driver development: with today’s kernels, what once required years of development time can be accomplished in days. In this practical, example-driven

book, one of the world's most experienced Linux driver developers systematically demonstrates how to develop reliable Linux drivers for virtually any device. Essential Linux Device Drivers is for any programmer with a working knowledge of operating systems and C, including programmers who have never written drivers before. Sreekrishnan Venkateswaran focuses on the essentials, bringing together all the concepts and techniques you need, while avoiding topics that only matter in highly specialized situations. Venkateswaran begins by reviewing the Linux 2.6 kernel capabilities that are most relevant to driver developers. He introduces simple device classes; then turns to serial buses such as I2C and SPI; external buses such as PCMCIA, PCI, and USB; video, audio, block, network, and wireless device drivers; user-space drivers; and drivers for embedded Linux—one of today's fastest growing areas of Linux development. For each, Venkateswaran explains the technology, inspects relevant kernel source files, and walks through developing a complete example. • Addresses drivers discussed in no other book, including drivers for I2C, video, sound, PCMCIA, and different types of flash memory • Demystifies essential kernel services and facilities, including kernel threads and helper interfaces • Teaches polling, asynchronous notification, and I/O control • Introduces the Inter-Integrated Circuit Protocol for embedded Linux drivers •

Covers multimedia device drivers using the Linux-Video subsystem and Linux-Audio framework • Shows how Linux implements support for wireless technologies such as Bluetooth, Infrared, WiFi, and cellular networking • Describes the entire driver development lifecycle, through debugging and maintenance • Includes reference appendixes covering Linux assembly, BIOS calls, and Seq files

Getting help

Linux Cookbook

A Complete Guide to Red Hat's Community Distribution

Algorithms and Structures of Version 2.4

The Linux Networking Architecture

Linux Kernel Internals

Up-to-the-Minute, Complete Guidance for Developing Embedded Solutions with Linux Linux has emerged as today's #1 operating system for embedded products. Christopher Hallinan's Embedded Linux Primer has proven itself as the definitive real-world guide to building efficient, high-value, embedded systems with Linux. Now, Hallinan has thoroughly updated this highly praised book for the newest Linux kernels, capabilities, tools, and hardware support, including advanced multicore processors. Drawing on more than a decade of embedded Linux experience, Hallinan helps you rapidly climb the learning curve, whether you're moving from legacy environments or you're new to embedded programming. Hallinan addresses

today's most important development challenges and demonstrates how to solve the problems you're most likely to encounter. You'll learn how to build a modern, efficient embedded Linux development environment, and then utilize it as productively as possible. Hallinan offers up-to-date guidance on everything from kernel configuration and initialization to bootloaders, device drivers to file systems, and BusyBox utilities to real-time configuration and system analysis. This edition adds entirely new chapters on UDEV, USB, and open source build systems. Tour the typical embedded system and development environment and understand its concepts and components. Understand the Linux kernel and userspace initialization processes. Preview bootloaders, with specific emphasis on U-Boot. Configure the Memory Technology Devices (MTD) subsystem to interface with flash (and other) memory devices. Make the most of BusyBox and latest open source development tools. Learn from expanded and updated coverage of kernel debugging. Build and analyze real-time systems with Linux. Learn to configure device files and driver loading with UDEV. Walk through detailed coverage of the USB subsystem. Introduces the latest open source embedded Linux build systems. Reference appendices include U-Boot and BusyBox commands.

The Linux Programming Interface (TLPI) is the definitive guide to the Linux and UNIX programming

interface—the interface employed by nearly every application that runs on a Linux or UNIX system. In this authoritative work, Linux programming expert Michael Kerrisk provides detailed descriptions of the system calls and library functions that you need in order to master the craft of system programming, and accompanies his explanations with clear, complete example programs. You'll find descriptions of over 500 system calls and library functions, and more than 200 example programs, 88 tables, and 115 diagrams. You'll learn how to: –Read and write files efficiently –Use signals, clocks, and timers –Create processes and execute programs –Write secure programs –Write multithreaded programs using POSIX threads –Build and use shared libraries –Perform interprocess communication using pipes, message queues, shared memory, and semaphores –Write network applications with the sockets API While The Linux Programming Interface covers a wealth of Linux-specific features, including epoll, inotify, and the /proc file system, its emphasis on UNIX standards (POSIX.1-2001/SUSv3 and POSIX.1-2008/SUSv4) makes it equally valuable to programmers working on other UNIX platforms. The Linux Programming Interface is the most comprehensive single-volume work on the Linux and UNIX programming interface, and a book that's destined to become a new classic.

Linux Kernel Networking takes you on a guided in-depth tour of the current Linux networking

implementation and the theory behind it. Linux kernel networking is a complex topic, so the book won't burden you with topics not directly related to networking. This book will also not overload you with cumbersome line-by-line code walkthroughs not directly related to what you're searching for; you'll find just what you need, with in-depth explanations in each chapter and a quick reference at the end of each chapter. Linux Kernel Networking is the only up-to-date reference guide to understanding how networking is implemented, and it will be indispensable in years to come since so many devices now use Linux or operating systems based on Linux, like Android, and since Linux is so prevalent in the data center arena, including Linux-based virtualization technologies like Xen and KVM.

Any UNIX programmer using the latest workstations or super minicomputers from vendors such as Sun, Silicon Graphics (SGI), ATandT, Amdahl, IBM, Apple, Compaq, Mentor Graphics, and Thinking Machines needs this book to optimize his/her job performance. This book teaches how these architectures operate using clear, comprehensible examples to explain the concepts, and provides a good reference for people already familiar with the basic concepts.

Practical C++ Programming

The Design and Implementation of the 4.4 BSD Operating System

Bash Guide for Beginners (Second Edition)
Attacking the Core
Advanced Bash Scripting Guide
Linux Kernel Programming

This book will get you up to speed quickly on Fedora Linux, a securely-designed Linux distribution that includes a massive selection of free software packages. Fedora is hardened out-of-the-box, it's easy to install, and extensively customizable - and this book shows you how to make Fedora work for you.--[from publisher's description]

This collection of tips, tools, and scripts provides clear, concise, hands-on solutions that can be applied to the challenges facing anyone running a network of Linux servers from small networks to large data centers.

Benvenuti describes the relationship between the Internet's TCP/IP implementation and the Linux Kernel so that programmers and advanced administrators can modify and fine-tune their network environment.

Linux Kernel Module Programming Guide is for people who want to write kernel modules. It takes a hands-on approach starting with writing a small "hello, world" program, and quickly moves from there. Far from a boring text on programming, Linux Kernel Module Programming Guide has a lively style that entertains while it educates. An excellent guide for anyone wishing to get started on kernel module programming. *** Money raised from the sale of this book supports the development of free software and documentation.

Implementation and Theory

Fedora Linux

Covering 9.10 and 10.4

Embedded Linux Primer

Linux Kernel How To
Linux Essentials for Cybersecurity

The Bash Guide for Beginners (Second Edition) discusses concepts useful in the daily life of the serious Bash user. While a basic knowledge of shell usage is required, it starts with a discussion of shell building blocks and common practices. Then it presents the grep, awk and sed tools that will later be used to create more interesting examples. The second half of the course is about shell constructs such as loops, conditional tests, functions and traps, and a number of ways to make interactive scripts. All chapters come with examples and exercises that will help you become familiar with the theory.

Provides information on writing a driver in Linux, covering such topics as character devices, network interfaces, driver debugging, concurrency, and interrupts.

RTFM Do not be afraid to ask, but first read the documentation, otherwise you maight annoy others and not get help. Micro-course discusses possible ways to obtain help from Linux: bash help,

manuals and system documentation. It also explains where to find Linux documentation on the Internet.
Learn how to write high-quality kernel module code, solve common Linux kernel programming issues, and understand the fundamentals of Linux kernel internals Key Features Discover how to write kernel code using the Loadable Kernel Module framework Explore industry-grade techniques to perform efficient memory allocation and data synchronization within the kernel Understand the essentials of key internals topics such as kernel architecture, memory management, CPU scheduling, and kernel synchronization Book Description Linux Kernel Programming is a comprehensive introduction for those new to Linux kernel and module development. This easy-to-follow guide will have you up and running with writing kernel code in next-to-no time. This book uses the latest 5.4 Long-Term Support (LTS) Linux kernel, which will be maintained from November 2019 through to December 2025. By working with the 5.4 LTS kernel throughout the book, you can be confident that your knowledge will

continue to be valid for years to come. This Linux book begins by showing you how to build the kernel from the source. Next, you'll learn how to write your first kernel module using the powerful Loadable Kernel Module (LKM) framework. The book then covers key kernel internals topics including Linux kernel architecture, memory management, and CPU scheduling. Next, you'll delve into the fairly complex topic of concurrency within the kernel, understand the issues it can cause, and learn how they can be addressed with various locking technologies (mutexes, spinlocks, atomic, and refcount operators). You'll also benefit from more advanced material on cache effects, a primer on lock-free techniques within the kernel, deadlock avoidance (with lockdep), and kernel lock debugging techniques. By the end of this kernel book, you'll have a detailed understanding of the fundamentals of writing Linux kernel module code for real-world projects and products. What you will learn Write high-quality modular kernel code (LKM framework) for 5.x kernels Configure

and build a kernel from source Explore the Linux kernel architecture Get to grips with key internals regarding memory management within the kernel Understand and work with various dynamic kernel memory alloc/dealloc APIs Discover key internals aspects regarding CPU scheduling within the kernel Gain an understanding of kernel concurrency issues Find out how to work with key kernel synchronization primitives Who this book is for This book is for Linux programmers beginning to find their way with Linux kernel development. Linux kernel and driver developers looking to overcome frequent and common kernel development issues, as well as understand kernel internals, will benefit from this book. A basic understanding of Linux CLI and C programming is required.

Symmetric Multiprocesssing and Caching for Kernel Programmers

Building Embedded Linux Systems

LPIC-2: Linux Professional Institute Certification Study Guide

A Linux and UNIX System Programming Handbook

A Top-down Approach for X86 and PowerPC

Architectures

The C Programming Language

Ubuntu Unleashed 2010 Edition presents comprehensive coverage of the popular Ubuntu Linux distribution. Windows users, Mac users, and Linux enthusiasts have been increasingly turning to Ubuntu for a user-friendly, easy-to-use Linux distribution. This book provides detailed information on installing, using, and administering Ubuntu. You will learn how to set up a workstation or a server, and you will find complete details on Ubuntu's easy-to-use desktop and productivity software. Ubuntu Unleashed 2010 Edition includes a range of coverage: From the software you need in your everyday work, such as the OpenOffice.org productivity suite, to how to configure your Linux desktop to run smoothly using multiple printers, shell scripts, and more. For the hardcore Linux enthusiast, there is complete coverage of the X Window system, Linux programming, web server administration, and network administration. Install and configure Ubuntu Get all your system's devices and peripherals up and running Configure and use the X Window System Manage Linux services and users Run a printer server Connect to a local network and the Internet Set up and administer a web server with Apache Secure your machine and your network from intruders Learn shell scripting Share files with Windows users using Samba Get productive with OpenOffice.org Play games on Linux Use Linux multimedia programs Create and maintain a MySQL database Configure a firewall Set up an FTP server Use Ubuntu's development and programming tools Tune your Ubuntu system for

maximum performance Learn to manage and compile the kernel and modules

A Guide to Kernel Exploitation: Attacking the Core discusses the theoretical techniques and approaches needed to develop reliable and effective kernel-level exploits, and applies them to different operating systems, namely, UNIX derivatives, Mac OS X, and Windows. Concepts and tactics are presented categorically so that even when a specifically detailed vulnerability has been patched, the foundational information provided will help hackers in writing a newer, better attack; or help pen testers, auditors, and the like develop a more concrete design and defensive structure. The book is organized into four parts. Part I introduces the kernel and sets out the theoretical basis on which to build the rest of the book. Part II focuses on different operating systems and describes exploits for them that target various bug classes. Part III on remote kernel exploitation analyzes the effects of the remote scenario and presents new techniques to target remote issues. It includes a step-by-step analysis of the development of a reliable, one-shot, remote exploit for a real vulnerabilitya bug affecting the SCTP subsystem found in the Linux kernel. Finally, Part IV wraps up the analysis on kernel exploitation and looks at what the future may hold. Covers a range of operating system families — UNIX derivatives, Mac OS X, Windows Details common scenarios such as generic memory corruption (stack overflow, heap overflow, etc.) issues, logical bugs and race conditions Delivers the reader from user-land exploitation to the world of kernel-land (OS) exploits/attacks, with a particular focus on the

steps that lead to the creation of successful techniques, in order to give to the reader something more than just a set of tricks

CD-ROM contains: Linux kernel version 2.4.4, plus sources from other programs and documents from the Linux Documentation Project.

ALL YOU NEED TO KNOW TO SECURE LINUX SYSTEMS, NETWORKS, APPLICATIONS, AND DATA–IN ONE BOOK From the basics to advanced techniques: no Linux security experience necessary Realistic examples & step-by-step activities: practice hands-on without costly equipment The perfect introduction to Linux-based security for all students and IT professionals Linux distributions are widely used to support mission-critical applications and manage crucial data. But safeguarding modern Linux systems is complex, and many Linux books have inadequate or outdated security coverage. Linux Essentials for Cybersecurity is your complete solution. Leading Linux certification and security experts William “Bo” Rothwell and Dr. Denise Kinsey introduce Linux with the primary goal of enforcing and troubleshooting security. Their practical approach will help you protect systems, even if one or more layers are penetrated. First, you’ll learn how to install Linux to achieve optimal security upfront, even if you have no Linux experience. Next, you’ll master best practices for securely administering accounts, devices, services, processes, data, and networks. Then, you’ll master powerful tools and automated scripting techniques for footprinting, penetration testing, threat detection, logging, auditing, software management, and

more. To help you earn certification and demonstrate skills, this guide covers many key topics on CompTIA Linux+ and LPIC-1 exams. Everything is organized clearly and logically for easy understanding, effective classroom use, and rapid on-the-job training. LEARN HOW TO: Review Linux operating system components from the standpoint of security Master key commands, tools, and skills for securing Linux systems Troubleshoot common Linux security problems, one step at a time Protect user and group accounts with Pluggable Authentication Modules (PAM), SELinux, passwords, and policies Safeguard files and directories with permissions and attributes Create, manage, and protect storage devices: both local and networked Automate system security 24/7 by writing and scheduling scripts Maintain network services, encrypt network connections, and secure network-accessible processes Examine which processes are running–and which may represent a threat Use system logs to pinpoint potential vulnerabilities Keep Linux up-to-date with Red Hat or Debian software management tools Modify boot processes to harden security Master advanced techniques for gathering system information

Linux Kernel Networking

Linux Network Administrator's Guide

Lions' Commentary on UNIX 6th Edition with Source Code

Exam 201 and Exam 202

Linux Kernel in a Nutshell

Understanding the Linux Kernel

The FreeBSD Handbook is a comprehensive FreeBSD

tutorial and reference. It covers installation, day-to-day use of FreeBSD, and mach more, such as the Ports collection, creating a custom kernel, security topics, the X Window System, how to use FreeBSD's Linux binary compatibility, and how to upgrade your system from source using the 'make world' command, to name a few.
Presents information on Linux kernel configuration, compilation, and upgrades. Contains introductory information, a FAQ sheet, kernel configuration instructions, kernel compilation and repair information, additional package information, and a module discussion. Describes other configuration options and typical problem scenarios. Offers a tips and tricks section and links to other helpful "how to" sections.
LPIC-2 Cert Guide (201-400 and 202-400 Exams) is a best-of-breed exam study guide. Expert Linux/Unix instructor William “Bo” Rothwell shares preparation hints and test-taking tips, helping you identify areas of weakness and improve both your conceptual knowledge and hands-on skills. Material is presented in a concise manner, focusing on increasing your understanding and retention of exam topics. The book presents you with an organized test preparation routine through the use of proven series elements and techniques. Exam topic lists make referencing easy. Chapter-ending Exam Preparation Tasks help you drill on key concepts you must know thoroughly. Review questions help you assess your knowledge, and a final preparation chapter guides you through tools and resources to help you craft your final

study plan. You get access to the powerful Pearson IT Certification Practice Test engine, complete with hundreds of exam-realistic questions. The assessment engine offers you a wealth of customization options and reporting features, laying out a complete assessment of your knowledge to help you focus your study where it is needed most. Well-regarded for its level of detail, assessment features, and challenging review questions and exercises, this study guide helps you master the concepts and techniques that will allow you to succeed on the exam the first time. The study guide helps you master all the topics on both LPIC-2 exams, including: Capacity planning Managing the kernel Managing system startup Managing filesystems and devices Administering advanced storage devices Configuring the network Performing system maintenance Administering Domain Name Server (DNS) Configuring web services Administering file sharing Managing network clients Administering e-mail services Administering system security Learn, prepare, and practice for LPIC-2 201-400 and 202-400 exam success with this Cert Guide from Pearson IT Certification, a leader in IT Certification. Master LPIC-2 Exam 201-400 and 202-400 exam topics Assess your knowledge with chapter-ending quizzes Review key concepts with exam preparation tasks Practice with realistic exam questions

Linux® is being adopted by an increasing number of embedded systems developers, who have been won over by its sophisticated scheduling and networking, its cost-

free license, its open development model, and the support offered by rich and powerful programming tools. While there is a great deal of hype surrounding the use of Linux in embedded systems, there is not a lot of practical information. Building Embedded Linux Systems is the first in-depth, hard-core guide to putting together an embedded system based on the Linux kernel. This indispensable book features arcane and previously undocumented procedures for: Building your own GNU development toolchain Using an efficient embedded development framework Selecting, configuring, building, and installing a target-specific kernel Creating a complete target root filesystem Setting up, manipulating, and using solid-state storage devices Installing and configuring a bootloader for the target Cross-compiling a slew of utilities and packages Debugging your embedded system using a plethora of tools and techniques Details are provided for various target architectures and hardware configurations, including a thorough review of Linux's support for embedded hardware. All explanations rely on the use of open source and free software packages. By presenting how to build the operating system components from pristine sources and how to find more documentation or help, this book greatly simplifies the task of keeping complete control over one's embedded operating system, whether it be for technical or sound financial reasons.Author Karim Yaghmour, a well-known designer and speaker who is responsible for the Linux Trace Toolkit, starts by discussing the strengths and

weaknesses of Linux as an embedded operating system. Licensing issues are included, followed by a discussion of the basics of building embedded Linux systems. The configuration, setup, and use of over forty different open source and free software packages commonly used in embedded Linux systems are also covered. uClibc, BusyBox, U-Boot, OpenSSH, thttpd, tftp, strace, and gdb are among the packages discussed.

LPIC-2 Cert Guide

FreeBSD Handbook

The Linux Kernel Module Programming Guide

The Linux Programming Interface

UNIX Systems for Modern Architectures

Linux Kernel and Driver Development - Practical Labs

The authoritative guide to the latest Linux kernel: fully updated, with an all-new chapter on kernel data structures. * *Authored by a well-known member of the Linux kernel development team with a reputation for clarity, readability, and insight. *Covers all major subsystems and features of the latest version of the Linux 2.6.xx kernel. *Provides examples based on real kernel code: samples that developers can use to modify and improve the Linux kernel on their own. Linux Kernel Development, 3/e, is a start-to-finish guide to the design and implementation of the latest Linux 2.6.xx kernel, written specifically for programmers who want to understand the existing kernel, write new kernel code, and write software that relies on the kernel's behavior. Author Robert Love is respected worldwide for his contributions to the Linux kernel: contributions that have

improved everything from Linux preemption and process scheduling to virtual memory. In this book, he illuminates every major subsystem and feature of the current Linux kernel: their purpose, goals, design, implementation, and programming interfaces. He covers the kernel both from a theoretical and applied standpoint, helping programmers gain deep insights into operating system design as they master the skills of writing Linux kernel code.Love covers all important algorithms, relevant subsystems, process management, scheduling, time management and timers, system call interface, memory addressing, memory management, paging strategies, caching layers, VFS, kernel synchronization, signals, and more. This edition has been updated throughout to reflect changes since the original Linux kernel 2.6 was released. It also contains an entirely new chapter on kernel data structures.

Offers a comprehensive view of the underpinnings of the Linux kernel on the Intel x86 and the Power PC.

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

Summary: The Linux Kernel Book allows you to delve into the heart of this operating system by means of an in-depth treatment of the internal functioning of the kernel. Each chapter deals in detail with the system components, including: process management, memory management, IPC Systems V, signals, pipes, POSIX tty, file systems, loadable modules, and administration.

A comprehensive guide to kernel internals, writing kernel modules, and kernel synchronization

Linux Basic. AL1-030

The Linux Kernel Book
Linux Device Drivers
Linux Kernel Development

This introduction to networking on Linux now covers firewalls, including the use of ipchains and Netfilter, masquerading, and accounting. Other new topics in this second edition include Novell (NCP/IPX) support and INN (news administration). 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.

This is an expert guide to the 2.6 Linux Kernel's most important component: the Virtual Memory Manager.

Introduces the features of the C programming

language, discusses data types, variables, operators, control flow, functions, pointers, arrays, and structures, and looks at the UNIX system interface

Understanding the Linux Virtual Memory Manager

Essential Linux Device Drivers

Design and Implementation of Network Protocols in the Linux Kernel

A Practical Real-World Approach

(201-400 and 202-400 exams)

The Linux Kernel Primer

Nwely updated to include new calls and techniques introduced in Versions 2.2 and 2.4 of the Linux kernel, a definitive resource for those who want to support computer peripherals under the Linux operating system explains how to write a driver for a broad spectrum of devices, including character devices, network interfaces, and block devices. Original. (Intermediate)

For the past 20 years, UNIX insiders have cherished and zealously guarded pirated photocopies of this manuscript, a "hacker trophy" of sorts. Now legal (and legible) copies are available. An international "who's who" of UNIX wizards, including Dennis Ritchie, have contributed essays extolling the merits and importance of this underground classic.

Since the introduction of Linix version

1.2 in March 1995, a worldwide community has evolved from programmers who were attracted by the reliability and flexibility of this completely free operating system. Now at version 2.0, Linux is no longer simply the operating system of choice for hackers, but is being successfully employed in commercial software development, by Internet providers and in research and teaching. This book is written for anybody who wants to learn more about Linux. It explains the inner mechanisms of Linux from process scheduling to memory management and file systems, and will tell you all you need to know about the structure of the kernel, the heart of the Linux operating system. This New Edition: has been thoroughly updated throughout to cover Linux 2.0 shows you how the Linux operating system actually works so that you can start to program the Linux kernel for yourself introduces the kernel sources and describes basic algorithms and data structures, such as scheduling and task structure helps you to understand file systems, networking, and how systems boot The accompanying CD-ROM contains Slackware distribution 3.1 together with its complete source code, the Linux kernel sources up to version 2.0.27, the PC

speaker driver, and a wealth of documentation. 0201331438B04062001
This book contains the practical labs corresponding to the "Linux Kernel and Driver Development: Training Handouts" book from Bootlin. Get your hands on an embedded board based on an ARM processor (the Beagle Bone Black board), and apply what you learned: write a Device Tree to declare devices connected to your board, configure pin multiplexing, and implement drivers for I2C and serial devices. You will learn how to manage multiple devices with the same driver, to acces and write hardware registers, to allocate memory, to register and manage interrupts, as well as how to debug your code and interpret the kernel error messages. You will also keep an eye on the board and CPU datasheets so that you will always understand the values that you feed to the kernel.
Ubuntu Unleashed 2010 Edition
Understanding Linux Network Internals
A Guide to Kernel Exploitation

Provides a definitive resource for those who want to support computer peripherals under the Linux operating system, explaining how to write a driver for a broad spectrum of devices, including character devices, network interfaces, and block devices. Original. (Intermediate).

Full coverage of the latest LPI-level 2 exams, with bonus online test bank LPIC-2 is the one-stop preparation resource

for the Linux Professional Institute's Advanced Level certification exam. With 100 percent coverage of all exam objectives, this book provides clear and concise coverage of the Linux administration topics you'll need to know for exams 201 and 202. Practical examples highlight the real-world applications of important concepts, and together, the author team provides insights based on almost fifty years in the IT industry. This brand new second edition has been completely revamped to align with the latest versions of the exams, with authoritative coverage of the Linux kernel, system startup, advanced storage, network configuration, system maintenance, web services, security, troubleshooting, and more. You also get access to online learning tools including electronic flashcards, chapter tests, practice exams, and a glossary of critical terms to help you solidify your understanding of upper-level Linux administration topics. The LPI-level 2 certification confirms your advanced Linux skill set, and the demand for qualified professionals continues to grow. This book gives you the conceptual guidance and hands-on practice you need to pass the exam with flying colors. Understand all of the material for both LPIC-2 exams Gain insight into real-world applications Test your knowledge with chapter tests and practice exams Access online study aids for more thorough preparation Organizations are flocking to the open-source Linux as an excellent, low-cost, secure alternative to expensive operating systems like Microsoft Windows. As the Linux market share continues to climb, organizations are scrambling to find network and server administrators with expert Linux knowledge and highly practical skills. The LPI-level 2 certification makes you the professional they need, and

LPIC-2 is your ideal guide to getting there.