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Python Essential Reference is the definitive reference guide to the Python programming language — the one authoritative handbook that reliably untangles and explains both the core Python language and the most essential parts of the Python library. Designed for the professional programmer, the book is concise, to the point, and highly accessible. It also includes detailed information on the Python library and many advanced subjects that is not available in either the official Python documentation or any other single

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reference source. Thoroughly updated to reflect the significant new programming language features and library modules that have been introduced in Python 2.6 and Python 3, the fourth edition of Python Essential Reference is the definitive guide for programmers who need to modernize existing Python code or who are planning an eventual migration to Python 3. Programmers starting a new Python project will find detailed coverage of contemporary Python programming idioms. This fourth edition of Python Essential Reference features numerous improvements, additions, and updates: Coverage of new language features, libraries, and modules Practical coverage of Python's more advanced

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features including generators, coroutines, closures, metaclasses, and decorators Expanded coverage of library modules related to concurrent programming including threads, subprocesses, and the new multiprocessing module Up-to-the-minute coverage of how to use Python 2.6's forward compatibility mode to evaluate code for Python 3 compatibility Improved organization for even faster answers and better usability Updates to reflect modern Python programming style and idioms Updated and improved example code Deep coverage of low-level system and networking library modules — including options not covered in the standard documentation Linux® is being adopted by an increasing number of

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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,

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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,

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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, tftpd, tftp, strace, and gdb are

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among the packages discussed.

Beginning and experienced programmers will use this comprehensive guide to persistent memory programming. You will understand how persistent memory brings together several new software/hardware requirements, and offers great promise for better performance and faster application startup times—a huge leap forward in byte-addressable capacity compared with current DRAM offerings. This revolutionary new technology gives applications significant performance and capacity improvements over existing technologies. It requires a new way of thinking and developing, which makes this highly disruptive to the

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IT/computing industry. The full spectrum of industry sectors that will benefit from this technology include, but are not limited to, in-memory and traditional databases, AI, analytics, HPC, virtualization, and big data. Programming Persistent Memory describes the technology and why it is exciting the industry. It covers the operating system and hardware requirements as well as how to create development environments using emulated or real persistent memory hardware. The book explains fundamental concepts; provides an introduction to persistent memory programming APIs for C, C++, JavaScript, and other languages; discusses RMDA with persistent memory; reviews security features; and

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presents many examples. Source code and examples that you can run on your own systems are included. What You'll Learn Understand what persistent memory is, what it does, and the value it brings to the industry Become familiar with the operating system and hardware requirements to use persistent memory Know the fundamentals of persistent memory programming: why it is different from current programming methods, and what developers need to keep in mind when programming for persistence Look at persistent memory application development by example using the Persistent Memory Development Kit (PMDK) Design and optimize data structures for persistent memory Study

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how real-world applications are modified to leverage persistent memory Utilize the tools available for persistent memory programming, application performance profiling, and debugging Who This Book Is For C, C++, Java, and Python developers, but will also be useful to software, cloud, and hardware architects across a broad spectrum of sectors, including cloud service providers, independent software vendors, high performance compute, artificial intelligence, data analytics, big data, etc. This research aims at synthesizing literature on social capital theory and OSS communities to arrive at a conceptual model of social capital and individuals' value creation in OSS communities.

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Accordingly, it targets at replicating prior research that used social capital to predict diverse forms of outcome by using alternative operationalizations of the different social capital dimensions as well as forms of outcome and includes firm-sponsorship as moderator into the models. As a result of this research, it can be noted that the proven relationship between an OSS contributor's social capital and his created value is affected by firm-sponsorship. Furthermore, it could be shown that the proven relationship between an OSS contributor's social capital and associated individual outcomes is not affected by firm-sponsorship. Der Autor Dirk Homscheid received his doctorate from the

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University of Koblenz-Landau. His main research areas are social capital in Open Source software communities as well as application developer involvement in mobile platforms.

Write custom device drivers to support computer peripherals in Linux operating systems

The Linux Programming Interface

Linux Kernel Internals

Linux Network Administrator's Guide

The Linux Kernel Module Programming Guide

A Comprehensive Guide for Developers

Practical C++ Programming thoroughly covers: C++ syntax · Coding standards and

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style · Creation and use of object classes ·
Templates · Debugging and optimization · Use
of the C++ preprocessor · File input/output.
Over the last few years, Linux has grown both
as an operating system and a tool for personal
and business use. Simultaneously becoming
more user friendly and more powerful as a
back-end system, Linux has achieved new
plateaus: the newer filesystems have
solidified, new commands and tools have
appeared and become standard, and the
desktop--including new desktop

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environments--have proved to be viable, stable, and readily accessible to even those who don't consider themselves computer gurus. Whether you're using Linux for personal software projects, for a small office or home office (often termed the SOHO environment), to provide services to a small group of colleagues, or to administer a site responsible for millions of email and web connections each day, you need quick access to information on a wide range of tools. This book covers all aspects of administering and

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making effective use of Linux systems. Among its topics are booting, package management, and revision control. But foremost in Linux in a Nutshell are the utilities and commands that make Linux one of the most powerful and flexible systems available. Now in its fifth edition, Linux in a Nutshell brings users up-to-date with the current state of Linux.

Considered by many to be the most complete and authoritative command reference for Linux available, the book covers all substantial user, programming,

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administration, and networking commands for the most common Linux distributions. Comprehensive but concise, the fifth edition has been updated to cover new features of major Linux distributions. Configuration information for the rapidly growing commercial network services and community update services is one of the subjects covered for the first time. But that's just the beginning. The book covers editors, shells, and LILO and GRUB boot options. There's also coverage of Apache, Samba, Postfix, sendmail, CVS,

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Subversion, Emacs, vi, sed, gawk, and much more. Everything that system administrators, developers, and power users need to know about Linux is referenced here, and they will turn to this book again and again.

The Definitive Guide to Using, Programming, and Administering MySQL 5.0 and 5.1 MySQL is an open source relational database management system that has experienced a phenomenal growth in popularity and use. Known for its speed and ease of use, MySQL has proven itself to be particularly well-suited

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for developing database-backed websites and applications. In MySQL, Paul DuBois provides a comprehensive guide to using and administering MySQL effectively and productively. He describes everything from the basics of getting information into a database and formulating queries, to using MySQL with PHP or Perl to generate dynamic web pages, to writing your own programs that access MySQL databases, to administering MySQL servers. The fourth edition of this bestselling book has been meticulously

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revised and updated to thoroughly cover the latest features and capabilities of MySQL 5.0, as well as to add new coverage of features introduced with MySQL 5.1. "One of the best technical books I have read on any subject."

-Gregory Haley, C Vu, The Association of C & C++ Users "A top-notch user's guide and reference manual, and in my opinion, the only book you'll need for the daily operation and maintenance of MySQL databases." -Eugene Kim, Web Techniques Introduction 1 Part I: General MySQL Use Chapter 1: Getting

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Started with MySQL 13 Chapter 2: Using SQL to Manage Data 101 Chapter 3: Data Types 201 Chapter 4: Stored Programs 289 Chapter 5: Query Optimization 303 Part II: Using MySQL Programming Interfaces Chapter 6: Introduction to MySQL Programming 341 Chapter 7: Writing MySQL Programs Using C 359 Chapter 8: Writing MySQL Programs Using Perl DBI 435 Chapter 9: Writing MySQL Programs Using PHP 527 Part III: MySQL Administration Chapter 10: Introduction to MySQL Administration 579 Chapter 11: The

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MySQL Data Directory 585 Chapter 12:
General MySQL Administration 609 Chapter
13: Access Control and Security 699 Chapter
14: Database Maintenance, Backups, and
Replication 737 Part IV: Appendixes Appendix
A: Obtaining and Installing Software 777
Appendix B: Data Type Reference 797
Appendix C: Operator and Function Reference
813 Appendix D: System, Status, and User
Variable Reference 889 Appendix E: SQL
Syntax Reference 937 Appendix F: MySQL
Program Reference 1037 Note: Appendixes G,

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H, and I are located online and are accessible either by registering this book at informit.com/register or by visiting

www.kitebird.com/mysql-book. Appendix G: C API Reference 1121 Appendix H: Perl DBI API Reference 1177 Appendix I: PHP API Reference 1207 Index 1225

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

Operating Systems

Where the Kernel Meets the Hardware

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A Social Capital Perspective

Linux Kernel Development _p3

Talking Directly to the Kernel and C Library

The C Programming Language

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.

Actor-Network Theory and Technology

Innovation: Advancements and New Concepts

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provides a comprehensive look at the development of actor-network theory itself, as well as case studies of its use to assist in the explanation of various socio-technical phenomena. This book includes topics relating to technological innovation; both those using actor-network theory as an explanatory framework and those using other approaches. It is an excellent source of information regarding ANT as an approach to technological innovation and its link to ICT (Information Communication Technology).

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There is nothing like the power of the kernel in Windows - but how do you write kernel drivers to take advantage of that power? This book will show you how. The book describes software kernel drivers programming for Windows. These drivers don't deal with hardware, but rather with the system itself: processes, threads, modules, registry and more. Kernel code can be used for monitoring important events, preventing some from occurring if needed. Various filters can be written that can intercept calls that a driver may

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be interested in.

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

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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

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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

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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

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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.

Understanding the Linux Kernel

Building Embedded Linux Systems

The Hybrid Work of Linux Free/open Source
Kernel Developers

Linux System Programming

Mastering Linux Device Driver Development

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Linux Device Drivers Development

This Rust book is designed to guide you through systems programming with Rust using practical examples and projects. You'll explore various Rust features, along with useful techniques, which will help you to develop system tools, utilities, and more. Since the introduction of Linux 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

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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

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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

Publisher Description

UNIX, UNIX LINUX & UNIX TCL/TK. Write software that makes the most effective use of the Linux system, including the kernel and core system libraries. The majority of both Unix and Linux code is still written at the system level, and this book helps you focus on everything above the kernel, where applications such as Apache, bash, cp, vim, Emacs, gcc, gdb, glibc, ls, mv, and X exist. Written primarily

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for engineers looking to program at the low level, this updated edition of Linux System Programming gives you an understanding of core internals that makes for better code, no matter where it appears in the stack. -- Provided by publisher.

Linux Kernel Programming

Linux Kernel Development

CompTIA Linux+ Guide to Linux Certification

Linux Kernel Development, Second Edition

Actor-Network Theory and Technology Innovation:

Advancements and New Concepts

Firm-Sponsored Developers in Open Source Software Projects

The authoritative guide to the latest Linux kernel:

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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

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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

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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.

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It also contains an entirely new chapter on kernel data structures.

Git is the version control system developed by Linus Torvalds for Linux kernel development. It took the open source world by storm since its inception in 2005, and is used by small development shops and giants like Google, Red Hat, and IBM, and of course many open source projects. A book by Git experts to turn you into a Git expert Introduces the world of distributed version control Shows how to build a Git development workflow

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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).

You may be contemplating your first Linux installation. Or you may have been using Linux for years and need to know more about adding a network printer or setting up an FTP server. Running Linux, now in its fifth edition, is the book you'll want on hand in either case. Widely

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recognized in the Linux community as the ultimate getting-started and problem-solving book, it answers the questions and tackles the configuration issues that frequently plague users, but are seldom addressed in other books. This fifth edition of Running Linux is greatly expanded, reflecting the maturity of the operating system and the teeming wealth of software available for it. Hot consumer topics such as audio and video playback applications, groupware functionality, and spam filtering are covered, along with the basics in configuration

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and management that always have made the book popular. Running Linux covers basic communications such as mail, web surfing, and instant messaging, but also delves into the subtleties of network configuration--including dial-up, ADSL, and cable modems--in case you need to set up your network manually. The book can make you proficient on office suites and personal productivity applications--and also tells you what programming tools are available if you're interested in contributing to these applications. Other new topics in the fifth edition

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include encrypted email and filesystems, advanced shell techniques, and remote login applications. Classic discussions on booting, package management, kernel recompilation, and X configuration have also been updated. The authors of Running Linux have anticipated problem areas, selected stable and popular solutions, and provided clear instructions to ensure that you'll have a satisfying experience using Linux. The discussion is direct and complete enough to guide novice users, while still providing the additional information

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experienced users will need to progress in their mastery of Linux. Whether you're using Linux on a home workstation or maintaining a network server, Running Linux will provide expert advice just when you need it.

A Design-oriented Approach

***Musings on Linux and Open Source by an
Accidental Revolutionary***

***Understanding the Linux Virtual Memory
Manager***

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

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synchronization

Jumpstart Your Linux Programming Skills

Mastering Linux Kernel Development

Equip today's users with the most up-to-date information to pass CompTIA's Linux+ (Powered by LPI) Certification exam successfully and excel when using Linux in the business world with Eckert's LINUX+ GUIDE TO LINUX CERTIFICATION, 4E. This complete guide provides a solid conceptual foundation and mastery of the hands-on skills necessary to work with the Linux

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operation system in today's network administration environment. The author does an exceptional job of maintaining a focus on quality and providing classroom usability while highlighting valuable real-world experiences. This edition's comprehensive coverage emphasizes updated information on the latest Linux distributions as well as storage technologies commonly used in server environments, such as LVM and ZFS. New, expanded material addresses key job-related networking services, including FTP,

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NFS, Samba, Apache, DNS, DHCP, NTP, Squid, Postfix, SSH, VNC, Postgresql, and iptables/firewalld. Readers study the latest information on current and emerging security practices and technologies. Hands-On Projects help learners practice new skills using both Fedora™ 20 and Ubuntu Server 14.04 Linux, while review questions and key terms reinforce important concepts. Trust LINUX+ GUIDE TO LINUX CERTIFICATION, 4E for the mastery today's users need for success on the certification exam and throughout their careers. Important Notice:

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Media content referenced within the product description or the product text may not be available in the ebook version.

Explore Implementation of core kernel subsystems About This Book Master the design, components, and structures of core kernel subsystems Explore kernel programming interfaces and related algorithms under the hood Completely updated material for the 4.12.10 kernel Who This Book Is For If you are a kernel programmer with a knowledge of kernel APIs and are looking to build a

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comprehensive understanding, and eager to explore the implementation, of kernel subsystems, this book is for you. It sets out to unravel the underlying details of kernel APIs and data structures, piercing through the complex kernel layers and gives you the edge you need to take your skills to the next level. What You Will Learn Comprehend processes and files—the core abstraction mechanisms of the Linux kernel that promote effective simplification and dynamism Decipher process scheduling and understand effective capacity utilization

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***under general and real-time dispositions
Simplify and learn more about process
communication techniques through signals
and IPC mechanisms Capture the rudiments
of memory by grasping the key concepts
and principles of physical and virtual
memory management Take a sharp and
precise look at all the key aspects of
interrupt management and the clock
subsystem Understand concurrent
execution on SMP platforms through kernel
synchronization and locking techniques In
Detail Mastering Linux Kernel Development***

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looks at the Linux kernel, its internal arrangement and design, and various core subsystems, helping you to gain significant understanding of this open source marvel. You will look at how the Linux kernel, which possesses a kind of collective intelligence thanks to its scores of contributors, remains so elegant owing to its great design. This book also looks at all the key kernel code, core data structures, functions, and macros, giving you a comprehensive foundation of the implementation details of the kernel's core services and mechanisms. You will also

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look at the Linux kernel as well-designed software, which gives us insights into software design in general that are easily scalable yet fundamentally strong and safe. By the end of this book, you will have considerable understanding of and appreciation for the Linux kernel. Style and approach Each chapter begins with the basic conceptual know-how for a subsystem and extends into the details of its implementation. We use appropriate code excerpts of critical routines and data structures for subsystems.

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

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)
Essential Linux Device Drivers

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Professional Linux Kernel Architecture
A kernel developer's reference manual
Programming Persistent Memory
Understanding Linux Network Internals
***A Distribution-Neutral Guide for Servers and
Desktops***

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

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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.

Introduces the features of the C programming language, discusses data types, variables, operators, control flow, functions, pointers, arrays, and

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structures, and looks at the UNIX system interface

Master the art of developing customized device drivers for your embedded Linux systems Key Features Stay up to date with the Linux PCI, ASoC, and V4L2 subsystems and write device drivers for them Get to grips with the Linux kernel power management infrastructure Adopt a practical approach to customizing your Linux environment using best practices Book Description Linux is one of the fastest-growing operating systems around

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the world, and in the last few years, the Linux kernel has evolved significantly to support a wide variety of embedded devices with its improved subsystems and a range of new features. With this book, you'll find out how you can enhance your skills to write custom device drivers for your Linux operating system. Mastering Linux Device Driver Development provides complete coverage of kernel topics, including video and audio frameworks, that usually go unaddressed. You'll work with some of the most complex and impactful

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Linux kernel frameworks, such as PCI, ALSA for SoC, and Video4Linux2, and discover expert tips and best practices along the way. In addition to this, you'll understand how to make the most of frameworks such as NVMEM and Watchdog. Once you've got to grips with Linux kernel helpers, you'll advance to working with special device types such as Multi-Function Devices (MFD) followed by video and audio device drivers. By the end of this book, you'll be able to write feature-rich device drivers and integrate them

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with some of the most complex Linux kernel frameworks, including V4L2 and ALSA for SoC. What you will learn Explore and adopt Linux kernel helpers for locking, work deferral, and interrupt management Understand the Regmap subsystem to manage memory accesses and work with the IRQ subsystem Get to grips with the PCI subsystem and write reliable drivers for PCI devices Write full multimedia device drivers using ALSA SoC and the V4L2 framework Build power-aware device drivers using the kernel power management

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framework Find out how to get the most out of miscellaneous kernel subsystems such as NVMEM and Watchdog Who this book is for This book is for embedded developers, Linux system engineers, and system programmers who want to explore Linux kernel frameworks and subsystems. C programming skills and a basic understanding of driver development are necessary to get started with this book. Linux Kernel Development details the design and implementation of the Linux kernel, presenting the content in a manner

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that is beneficial to those writing and developing kernel code, as well as to programmers seeking to better understand the operating system and become more efficient and productive in their coding. The book details the major subsystems and features of the Linux kernel, including its design, implementation, and interfaces. It covers the Linux kernel with both a practical and theoretical eye, which should appeal to readers with a variety of interests and needs. The author, a core kernel developer, shares

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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

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**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
Linux for Developers
Linux Kernel in a Nutshell
Python Essential Reference**

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**Build fast and secure software for
Linux/Unix systems with the help of
practical examples**

Advancements and New Concepts

Running Linux

**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**

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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**

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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

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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.

Device drivers literally drive everything you're interested in--disks, monitors, keyboards, modems--everything outside the computer chip and memory. And writing device drivers is one of the few areas of programming for the Linux operating system that calls for unique, Linux-specific

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knowledge. For years now, programmers have relied on the classic Linux Device Drivers from O'Reilly to master this critical subject. Now in its third edition, this bestselling guide provides all the information you'll need to write drivers for a wide range of devices. Over the years the book has helped countless programmers learn: how to support computer peripherals under the Linux operating system how to develop and write software for new hardware under Linux the basics of Linux operation even if they are

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not expecting to write a driver The new edition of Linux Device Drivers is better than ever. The book covers all the significant changes to Version 2.6 of the Linux kernel, which simplifies many activities, and contains subtle new features that can make a driver both more efficient and more flexible. Readers will find new chapters on important types of drivers not covered previously, such as consoles, USB drivers, and more. Best of all, you don't have to be a kernel hacker to understand and enjoy this book. All you need

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is an understanding of the C programming language and some background in Unix system calls. And for maximum ease-of-use, the book uses full-featured examples that you can compile and run without special hardware. Today Linux holds fast as the most rapidly growing segment of the computer market and continues to win over enthusiastic adherents in many application areas. With this increasing support, Linux is now absolutely mainstream, and viewed as a solid platform for embedded systems. If

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you're writing device drivers, you'll want this book. In fact, you'll wonder how drivers are ever written without it.

Linux for Developers shows you how to start writing great code for Linux, whether you're a Linux user with little or no coding experience, or an experienced Windows programmer. Leading IT trainer/author William "Bo" Rothwell begins with a clear and up-to-date review of modern open source software, including the licensing arrangements and tradeoffs all developers

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need to understand. He presents essential skills for both Linux command line and GUI environments, introducing text editors and other tools for efficient coding. Building on this knowledge, Rothwell introduces scripting tools such as Bash, Python, and Perl, as well as traditional object-oriented programming languages such as Java, C++, and C. Finally, he presents a full section on the powerful Git version control system, teaching skills you can use in Linux and many other environments. Access Linux systems, use

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GUIs, and work at the command line Learn how Linux organizes files and navigate its filesystem Use basic developer commands such as gzip and grep Edit programs with vi and vim, and explore alternative editors Perform basic sysadmin tasks that developers often need to handle Compare Linux languages to choose the best one for each task Write Bash scripts that interact with users or other shell features Program with Python and Perl: flow control, variables, and more Understand Linux features related

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to building C, C++, and Java programs Stay on top of complex projects with GIT revision control Work in GIT: staging, committing, branches, diffs, merges, and patches Manage local and remote GIT repositories This guide's modular coverage helps you quickly access whatever information you need right now. 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

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**interfaces, and block devices. Original.
(Intermediate).**

**Develop customized drivers for embedded
Linux**

Pro Git

The Cathedral & the Bazaar

MySQL

Linux in a Nutshell

The Pressure of Openness

**Learn to develop customized device drivers for your
embedded Linux system About This Book Learn to
develop customized Linux device drivers Learn the core**

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concepts of device drivers such as memory management, kernel caching, advanced IRQ management, and so on. Practical experience on the embedded side of Linux Who This Book Is For This book will help anyone who wants to get started with developing their own Linux device drivers for embedded systems. Embedded Linux users will benefit highly from this book. This book covers all about device driver development, from char drivers to network device drivers to memory management. What You Will Learn Use kernel facilities to develop powerful drivers Develop drivers for widely used I2C and SPI devices and use the regmap API Write and support devicetree from within your drivers Program advanced drivers for network and

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frame buffer devices Delve into the Linux irqdomain API and write interrupt controller drivers Enhance your skills with regulator and PWM frameworks Develop measurement system drivers with IIO framework Get the best from memory management and the DMA subsystem Access and manage GPIO subsystems and develop GPIO controller drivers In Detail Linux kernel is a complex, portable, modular and widely used piece of software, running on around 80% of servers and embedded systems in more than half of devices throughout the World. Device drivers play a critical role in how well a Linux system performs. As Linux has turned out to be one of the most popular operating systems used, the interest in developing proprietary

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**device drivers is also increasing steadily. This book will initially help you understand the basics of drivers as well as prepare for the long journey through the Linux Kernel. This book then covers drivers development based on various Linux subsystems such as memory management, PWM, RTC, IIO, IRQ management, and so on. The book also offers a practical approach on direct memory access and network device drivers. By the end of this book, you will be comfortable with the concept of device driver development and will be in a position to write any device driver from scratch using the latest kernel version (v4.13 at the time of writing this book).
Style and approach A set of engaging examples to develop Linux device drivers**

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

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

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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,

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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

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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

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is required.

The Linux kernel is one of the most important and far-reaching open-source projects. That is why Novell Press is excited to bring you the second edition of Linux Kernel Development, Robert Love's widely acclaimed insider's look at the Linux kernel. This authoritative, practical guide helps developers better understand the Linux kernel through updated coverage of all the major subsystems as well as new features associated with the Linux 2.6 kernel. You'll be able to take an in-depth look at Linux kernel from both a theoretical and an applied perspective as you cover a wide range of topics, including algorithms, system call interface, paging strategies and kernel synchronization. Get the top

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information right from the source in Linux Kernel
Development.

A Linux and UNIX System Programming Handbook
Practical System Programming for Rust Developers

Linux Device Drivers

Windows Kernel Programming

Practical C++ Programming

*Open source provides the competitive
advantage in the Internet Age. According to
the August Forrester Report, 56 percent of IT
managers interviewed at Global 2,500
companies are already using some type of open
source software in their infrastructure and
another 6 percent will install it in the next*

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two years. This revolutionary model for collaborative software development is being embraced and studied by many of the biggest players in the high-tech industry, from Sun Microsystems to IBM to Intel. The Cathedral & the Bazaar is a must for anyone who cares about the future of the computer industry or the dynamics of the information economy. Already, billions of dollars have been made and lost based on the ideas in this book. Its conclusions will be studied, debated, and implemented for years to come. According to Bob Young, "This is Eric Raymond's great contribution to the success of the open

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source revolution, to the adoption of Linux-based operating systems, and to the success of open source users and the companies that supply them."The interest in open source software development has grown enormously in the past year. This revised and expanded paperback edition includes new material on open source developments in 1999 and 2000. Raymond's clear and effective writing style accurately describing the benefits of open source software has been key to its success. With major vendors creating acceptance for open source within companies, independent vendors will become the open source story in

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2001.

“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

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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

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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,*

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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

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maintenance • Includes reference appendixes covering Linux assembly, BIOS calls, and Seq files

*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*

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***development of free software and
documentation.***