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# Robert Love Linux Kernel Development 3rd Edition

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The C Programming  
Language Addison-  
Wesley Professional  
Linux Kernel  
Development details the  
design and

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implementation of the Linux kernel, presenting the content in a manner 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 valuable knowledge and experience on the 2.6 Linux kernel. Specific topics covered include process management, scheduling, time management and timers, the system call interface, memory addressing, memory management, the page cache, the VFS, kernel synchronization, portability concerns, and

debugging techniques. This book covers the most interesting features of the Linux 2.6 kernel, including the CFS scheduler, preemptive kernel, block I/O layer, and I/O schedulers. The third edition of Linux Kernel Development includes new and updated material throughout the book: An all-new chapter on kernel data structures Details on interrupt handlers and bottom halves Extended coverage of virtual memory and memory

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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

**Embedded Linux Primer**

CRC Press

“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

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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 [Linux Kernel Internals](#) "O'Reilly Media, Inc." The Definitive Guide to Using, Programming, and Administering MySQL 5.0 and 5.1 MySQL is an open source

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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 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 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 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

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Administration Chapter 10: Introduction to MySQL Administration 579	Chapter 11: The 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, H, and I are located online and are accessible either by registering this book at <a href="http://informit.com/register">informit.com/register</a> or by visiting <a href="http://www.kitebird.com/mysql-book">www.kitebird.com/mysql-</a> <a href="http://www.kitebird.com/mysql-book">book</a> . Appendix G: C API Reference 1121	Appendix H: Perl DBI API Reference 1177	Appendix I: PHP API Reference 1207	Index 1225	<i>Python Essential Reference</i> "O'Reilly Media, Inc." Find an introduction to the architecture,	concepts and algorithms of the Linux kernel in Professional Linux Kernel Architecture, a guide to the kernel sources and large number of connections among subsystems. Find an introduction to the relevant structures and functions exported by the kernel to userland, understand the theoretical and
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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. See MIPS Run "O'Reilly Media, Inc."

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 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. The Linux Kernel Module Programming Guide No Starch Press  
This book is about writing software that makes the most effective use of the system you're running on -- code that interfaces directly with the kernel and core system libraries, including the shell, text editor, compiler, debugger, core utilities, and system daemons. The majority of both Unix and Linux code is still written at the system level, and

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Linux System Programming focuses on everything above the kernel, where applications such as Apache, bash, cp, vim, Emacs, gcc, gdb, glibc, ls, mv, and X exist. Written primarily for engineers looking to program (better) at the low level, this book is an ideal teaching tool for any programmer. Even with the trend toward high-level development, either through web software (such as PHP) or managed code (C#), someone still has to write the PHP interpreter and the C# virtual machine. Linux System Programming gives you an understanding of core internals that makes for better code, no matter where it appears in the stack. Debugging high-level code

often requires you to understand the system calls and kernel behavior of your operating system, too. Key topics include: An overview of Linux, the kernel, the C library, and the C compiler Reading from and writing to files, along with other basic file I/O operations, including how the Linux kernel implements and manages file I/O Buffer size management, including the Standard I/O library Advanced I/O interfaces, memory mappings, and optimization techniques The family of system calls for basic process management Advanced process management, including real-time processes File and directories-creating, moving, copying, deleting, and managing

them Memory management -- interfaces for allocating memory, managing the memory you have, and optimizing your memory access Signals and their role on a Unix system, plus basic and advanced signal interfaces Time, sleeping, and clock management, starting with the basics and continuing through POSIX clocks and high resolution timers With Linux System Programming, you will be able to take an in-depth look at Linux from both a theoretical and an applied perspective as you cover a wide range of programming topics. [Programming in Objective-C 2.0](#) Pearson Education Linux for Developers shows you how to start writing great code for



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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 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 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

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.

*Linux Kernel Development* \_p3  
Pearson Education  
Provides information on writing a driver in Linux, covering such topics as character devices, network interfaces, driver debugging, concurrency, and interrupts.

*PHP and MySQL Web Development* Prentice Hall

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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.

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Introduces the latest open source embedded Linux build systems. Reference appendices include U-Boot and BusyBox commands.

### **Implementation and Theory**

Oreilly & Associates  
Incorporated

If you are an embedded developer learning about embedded Linux with some experience with the Yocto project, this book is the ideal way to become proficient and broaden your knowledge with examples that are immediately applicable to your embedded developments. Experienced embedded Yocto developers will find new insight into working methodologies and

ARM specific development competence.

Understanding the Linux Virtual Memory Manager Pearson Educación

A practical tutorial guide which introduces you to the basics of Yocto Project, and also helps you with its real hardware use to boost your Embedded Linux-based project. If you are an embedded systems enthusiast and willing to learn about compelling features offered by the Yocto Project, then this book is for you. With prior experience in the embedded Linux domain, you can make the most of this book to efficiently create custom Linux-based systems.

Linux Kernel Development

Packt Publishing Ltd

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

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other single 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 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

**The Art of UNIX Programming** John Wiley & Sons  
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

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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.

**The Definitive Guide to the Xen Hypervisor** Packt Publishing Ltd  
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.

**A comprehensive guide to kernel internals, writing kernel modules, and kernel synchronization** Pearson Education

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

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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 be interested in.

### **Embedded Linux**

#### **Development with Yocto**

**Project** Pearson Education Demonstrates Real-World Case Studies from a Range

of Event Sites Introduction to Crowd Science examines the growing rate of crowd-related accidents and incidents around the world. Using tools, methods, and worked examples gleaned from over 20 years of experience, this text provides an understanding of crowd safety. It establishes how crowd accidents and incidents (specifically mass fatalities in crowded spaces) can occur. It explores the underlying causes of incidences and implements techniques for crowd risk

analysis and crowd safety engineering that can help minimize and even eliminate occurrences altogether. Understand Overall Crowd Dynamics and Levels of Complex Structure The book outlines a simple modeling approach to crowd risk analysis and crowds safety in places of public assembly. With consideration for major events, and large-scale urban environments, the material focuses on the practical elements of developing the crowd risk analysis and crowd safety aspects of an

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event plan. It outlines a range of modeling techniques, including line diagrams that represent crowd flow, calculations of the speed at which a space can fill, and the time it takes for that space to reach critical and crush density. It also determines what to consider during the event planning and approval (licensing/permitting) phases of the event process. *Introduction to Crowd Science* addresses key questions and presents a systematic approach to

managing crowd risks in complex sites. It provides an understanding of the complexity of a site, and helps the reader plan for crowds in public places. *Linux Kernel Development* This is an expert guide to the 2.6 Linux Kernel's most important component: the Virtual Memory Manager. *Linux in a Nutshell* "O'Reilly Media, Inc." 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). *A Comprehensive Guide to Building, Programming, and Administering PostgreSQL Databases* CreateSpace 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

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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



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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 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.

**Creating Apps in Kivy**

Addison-Wesley Professional

Unlike some operating systems, Linux doesn't try to hide the important bits from you—it gives you full control of your computer. But to truly master Linux, you need to understand its internals, like how the

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system boots, how networking works, and what the kernel actually does. In this completely revised second edition of the perennial best seller *How Linux Works*, author Brian Ward makes the concepts behind Linux internals accessible to anyone curious about the inner workings of the operating system. Inside, you'll find the kind of knowledge that normally comes from years of experience doing things the hard way. You'll learn:

- How Linux boots, from

- boot loaders to init implementations (systemd, Upstart, and System V)
- How the kernel manages devices, device drivers, and processes
- How networking, interfaces, firewalls, and servers work
- How development tools work and relate to shared libraries
- How to write effective shell scripts

You'll also explore the kernel and examine key system tasks inside user space, including system calls, input and output, and filesystems. With its combination of background,

theory, real-world examples, and patient explanations, *How Linux Works* will teach you what you need to know to solve pesky problems and take control of your operating system.