

## Head First Linux

A guide to the programming language describes how to build Python-enabled Web servers and applications, write mobile apps on the Android platform, develop sophisticated games, build GUI-based programs, and write Python scripts to automate tasks.

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A guide to the C programming language covers such topics as pointers, memory management, multithreading, and network programming. Uses the Running Operation as the Main Thread Difficulty in understanding an operating system (OS) lies not in the technical aspects, but in the complex relationships inside the operating systems. The Art of Linux Kernel Design: Illustrating the Operating System Design Principle and Implementation addresses this complexity. Written from the perspective of the designer of an operating system, this book tackles important issues and practical problems on how to understand an operating system completely and systematically. It removes the mystery, revealing operating system design guidelines, explaining the BIOS code directly related to the operating system, and simplifying the relationships and guiding ideology behind it all. Based on the Source Code of a Real Multi-Process Operating System Using the 0.11 edition source code as a representation of the Linux basic design, the book illustrates the real states of an operating system in actual operations. It provides a complete, systematic analysis of the operating system source code, as well as a direct and complete understanding of the real operating system run-time structure. The author includes run-time memory structure diagrams, and an accompanying essay to help readers grasp the dynamics behind Linux and similar software systems. Identifies through diagrams the location of the key operating system data structures that lie in the memory Indicates through diagrams the current operating status information which helps users understand the interrupt state, and left time slice of processes Examines the relationship between process and memory, memory and file, file and process, and the kernel Explores the essential association, preparation, and transition, which is the vital part of operating system Develop a System of Your Own This text offers an in-depth study on mastering the operating system, and provides an important prerequisite for designing a whole new operating system.

LINUX OPERATIONS AND ADMINISTRATION introduces readers to Linux operations and system administration through a unified installation, using virtual machines. This text is more effective than those that take a professional approach because it eliminates confusion from working with differing hardware configurations, while allowing users to test interoperability between Linux and Windows. Detailed, yet reader-friendly, Linux Operations and Administration makes it easy to learn Linux and practice it with helpful in-text features like learning objectives and key terms, as well as items for self assessment such as review questions, hands-on activities, and case projects. Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version.

Provides step-by-step instructions on how to use the computer operating system Linux.

This book is written in a Cookbook style and it offers learning through recipes with examples and illustrations. Each recipe contains step-by-step instructions about everything necessary to execute a particular task. The book is designed so that you can read it from start to end for beginners, or just open up any chapter and start following the recipes as a reference for advanced users. If you are a beginner or an intermediate user who wants to master the skill of quickly writing scripts to perform various tasks without reading the entire manual, this book is for you. You can start writing scripts and one-liners by simply looking at the similar recipe and its descriptions without any working knowledge of shell scripting or Linux. Intermediate/advanced users as well as system administrators/ developers and programmers can use this book as a reference when they face problems while coding.

Learn Linux, and take your career to the next level! Linux Essentials, 2nd Edition provides a solid foundation of knowledge for anyone considering a career in information technology, for anyone new to the Linux operating system, and for anyone who is preparing to sit for the Linux Essentials Exam. Through this engaging resource, you can access key information in a learning-by-doing style. Hands-on tutorials and end-of-chapter exercises and review questions lead you in both learning and applying new information—information that will help you achieve your goals! With the experience provided in this compelling reference, you can sit down for the Linux Essentials Exam with confidence. An open source operating system, Linux is a UNIX-based platform that is freely updated by developers. The nature of its development means that Linux is a low-cost and secure alternative to other operating systems, and is used in many different IT environments. Passing the Linux Essentials Exam prepares you to apply your knowledge regarding this operating system within the workforce. Access lessons that are organized by task, allowing you to quickly identify the topics you are looking for and navigate the comprehensive information presented by the book Discover the basics of the Linux operating system, including distributions, types of open source applications, freeware, licensing, operations, navigation, and more Explore command functions, including navigating the command line, turning commands into scripts, and more Identify and create user types, users, and groups Linux Essentials, 2nd Edition is a critical resource for anyone starting a career in IT or anyone new to the Linux operating system.

Looking for a reliable way to learn how to program on your own, without being overwhelmed by confusing concepts? Head First Programming introduces the core concepts of writing computer programs -- variables, decisions, loops, functions, and objects -- which apply regardless of the programming language. This book offers concrete examples and exercises in the dynamic and versatile Python language to demonstrate and reinforce these concepts. Learn the basic tools to start writing the programs that interest you, and get a better understanding of what software can (and cannot) do. When you're finished, you'll have the necessary foundation to learn any programming language or tackle any software project you choose. With a focus on programming concepts, this book teaches you how to: Understand the core features of all programming languages, including: variables, statements, decisions, loops, expressions, and operators Reuse code with functions Use library code to save time and effort Select the best data structure to manage complex data Write programs that talk to the Web Share your data with other programs Write programs that test themselves and help you avoid embarrassing coding errors We think your time is too valuable to waste struggling with new concepts. Using the latest research in cognitive science and learning theory to craft a multi-sensory learning experience, Head First Programming uses a visually rich format designed for the way your brain works, not a text-heavy approach that puts you to sleep.

This book is a compendium of the realization of practices in the module of Operating Systems Single-user. It is focused on the basic realization of knowledge practices on content and the acquisition of skills, to be able to join a job, based on the professional family. Different operating systems are discussed in Linux: Fedora, Slackware, Debian, Ubuntu, Lubuntu, some variant and Android. Commands that are used: fdisk, gdisk, mount, umount, fsck, bklb, tune2fs, uuidgen, edquota, quota, quotacheck, quotaon, quotaoff, repquota, warnquota, touch, nano, pico, echo, umask, cat, less, more, rm, mv, chmod, chown, less, pg, wc, head, tail, cut, locate, ls, slocate, whereis, whatis, find, grep, ln, egrep, mount, umount, lsusb, eject, fuser, sort, comm, diff, gzip, gunzip, zcat, zmore, zcmp, zdiff, symlink, cal, ncal, tar, calendar, date, uptime, lsclock, watch, set, env, alias, unalias, uniq, sum, lsof, paste, lshal, biosdecode, lsattr, chatr, dmidecode.

Learn key topics such as language basics, pointers and pointer arithmetic, dynamic memory management, multithreading, and network programming. Learn how to use the compiler, the make tool, and the archiver.

A True Textbook for an Introductory Course, System Administration Course, or a Combination Course Linux with Operating System Concepts merges conceptual operating system (OS) and Unix/Linux topics into one cohesive textbook for undergraduate students. The book can be used for a one- or two-semester course on Linux or Unix. It is complete with review sections, problems, definitions, concepts, and relevant introductory material, such as binary and Boolean logic, OS kernels, and the role of the CPU and memory hierarchy. Details for Introductory and Advanced Users The book covers Linux from both the user and system administrator positions. From a user perspective, it emphasizes command line interaction. From a system administrator perspective, the text reinforces shell scripting with examples of administration scripts that support the automation of administrator tasks. Thorough Coverage of Concepts and Linux Commands The author incorporates OS concepts not found in most Linux/Unix textbooks, including kernels, file systems, storage devices, virtual memory, and process management. He also introduces computer science topics, such as computer networks and TCP/IP, binary numbers and Boolean logic, encryption, and the GNUs C compiler. In addition, the text discusses disaster recovery planning, booting, and Internet servers.

If you have always wanted to learn Linux but are still afraid to do so, this book is for you! A lot of people think of Linux as a sophisticated operating system that only hackers and geeks know how to use, and thus they abort their dream of learning Linux. Well, let me surprise you! Linux is simple and easy to learn, and this book is the ultimate proof! You may have stumbled across a variety of sources that all explain Linux in a complicated and dry manner. This book does exactly the opposite; it teaches you Linux in a delightful and friendly way so that you will never get bored, and you will always feel motivated to learn more. Learn Linux Quickly doesn't assume any prior Linux knowledge, which makes it a perfect fit for beginners. Nevertheless, intermediate and advanced Linux users will still find this book very useful as it goes through a wide range of topics. Learn Linux Quickly will teach you the following topics: · Installing Linux · Over 116 Linux Commands · User and Group Management · Linux Networking Fundamentals · Bash Scripting · Automate Boring Tasks with Cron Jobs · Create your Own Linux Commands · Linux Disk Partitioning and LVM · Finding Files on Linux · Understanding File Permissions · Linux Processes And much more! There is no time to waste here! Learn Linux Quickly and kick start your Linux career today!

Presents the concepts of writing computer programs, covering such topics as variables, loops, functions, data files and arrays, modular programming, widgets, exceptions, and objects.

What will you learn from this book? Dive into C# and create apps, user interfaces, games, and more using this fun and highly visual introduction to C#, .NET Core, and Visual Studio. With this completely updated guide, which covers C# 8.0 and Visual Studio 2019, beginning programmers like you will build a fully functional game in the opening chapter. Then you'll learn how to use classes and object-oriented programming, create 3D games in Unity, and query data with LINQ. And you'll do it all by solving puzzles, doing hands-on exercises, and building real-world applications. By the time you're done, you'll be a solid C# programmer--and you'll have a great time along the way! What's so special about this book? Based on the latest research in cognitive science and learning theory, Head First C# uses a visually rich format to engage your mind rather than a text-heavy approach that puts you to sleep. Why waste your time struggling with new concepts? This multisensory learning experience is designed for the way your brain really works.

Readers examine two of the most prominent operating systems -- Windows 10 and Linux CentOS7 -- in parallel with the unique approach found only in GUIDE TO PARALLEL OPERATING SYSTEMS WITH WINDOWS 10 AND LINUX, 3E. Rather than using a compare and contrast model, the book presents each topic conceptually before demonstrating it simultaneously on both operating systems. Readers can instantly switch between Windows 10 and Linux CentOS 7 to complete the myriad of hands-on activities that reinforce the similarities between the two operating systems for each conceptual task. The text's virtualization approach provides flexibility that enables readers to use Microsoft Hyper-V Client, Oracle VirtualBox, or VMWare Workstation. This comprehensive guide helps users develop the competencies needed in Windows 10 and Linux to maximize success in today's classroom or tomorrow's business environment. Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version.

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

Whether you're a systems administrator or a home user, you need to understand how Linux internals work before you can really master Linux — how it boots, how networking works, how to customize the kernel, and even what hardware to buy. How Linux Works contains the kind of information normally handed down from wizards—knowledge that comes from years of experience doing things the hard way. But instead of seeking the right incantation to make your system work, you can read How Linux Works to see how to administer Linux and why each particular technique works. This book covers such need-to-know topics as: –How Linux boots, with coverage of boot loaders and init –How networking, interfaces, firewalls, and servers work –How development tools and shared libraries work –How the kernel manages devices, device drivers, and processes, and how to build a custom kernel –How the Linux printing system works, with sections on cups, filters, and Ghostscript –How shell scripts work With its combination of background theory and real-world examples, How Linux Works will show you how to run your system instead of having your system run you.

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

Learn how to create and develop shell scripts in a step-by-step manner increasing your knowledge as you progress through the book. Learn how to work the shell commands so you can be more productive and save you time.

Ever wished you could learn Python from a book? Head First Python is a complete learning experience for Python that helps you learn the language through a unique method that goes beyond syntax and how-to manuals, helping you understand how to be a great Python

programmer. You'll quickly learn the language's fundamentals, then move onto persistence, exception handling, web development, SQLite, data wrangling, and Google App Engine. You'll also learn how to write mobile apps for Android, all thanks to the power that Python gives you. We think your time is too valuable to waste struggling with new concepts. Using the latest research in cognitive science and learning theory to craft a multi-sensory learning experience, Head First Python uses a visually rich format designed for the way your brain works, not a text-heavy approach that puts you to sleep.

This is Linux for those of us who don't mind typing. All Linux users and administrators tend to like the flexibility and speed of Linux administration from the command line in byte-sized chunks, instead of fairly standard graphical user interfaces. Beginning the Linux Command Line follows a task-oriented approach and is distribution-agnostic. Work with files and directories. Administer users and security. Understand how Linux is organized.

Provides information on successful software development, covering such topics as customer requirements, task estimates, principles of good design, dealing with source code, system testing, and handling bugs.

Over 100 recipes to get up and running with the modern Linux administration ecosystem Key Features Understand and implement the core system administration tasks in Linux Discover tools and techniques to troubleshoot your Linux system Maintain a healthy system with good security and backup practices Book Description Linux is one of the most widely used operating systems among system administrators, and even modern application and server development is heavily reliant on the Linux platform. The Linux Administration Cookbook is your go-to guide to get started on your Linux journey. It will help you understand what that strange little server is doing in the corner of your office, what the mysterious virtual machine languishing in Azure is crunching through, what that circuit-board-like thing is doing under your office TV, and why the LEDs on it are blinking rapidly. This book will get you started with administering Linux, giving you the knowledge and tools you need to troubleshoot day-to-day problems, ranging from a Raspberry Pi to a server in Azure, while giving you a good understanding of the fundamentals of how GNU/Linux works. Through the course of the book, you'll install and configure a system, while the author regales you with errors and anecdotes from his vast experience as a data center hardware engineer, systems administrator, and DevOps consultant. By the end of the book, you will have gained practical knowledge of Linux, which will serve as a bedrock for learning Linux administration and aid you in your Linux journey. What you will learn Install and manage a Linux server, both locally and in the cloud Understand how to perform administration across all Linux distros Work through evolving concepts such as IaaS versus PaaS, containers, and automation Explore security and configuration best practices Troubleshoot your system if something goes wrong Discover and mitigate hardware issues, such as faulty memory and failing drives Who this book is for If you are a system engineer or system administrator with basic experience of working with Linux, this book is for you.

A guide to Linux covers such topics as logging in, compressing files, using the command line, scripting, and security.

Readers of all levels stand to benefit from this book's coverage of SUSE's ability to play MP3s and DVDs, burn CDs, perform office tasks and data backups, and offer a secure operating system environment. Whether it is a reader evaluating SUSE for deployment in a corporate environment, or a student interested in foregoing expensive licensing arrangements, this book serves as an invaluable guide to the Linux platform. Having solidified its position as Europe's most popular variant SUSE Linux continues to grow in popularity within the U.S. market. SUSE is an increasingly viable alternative to the Windows platform on both the desktop and server level.

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.

The EC-Council | Press Ethical Hacking and Countermeasures Series is comprised of five books covering a broad base of topics in offensive network security, ethical hacking, and network defense and countermeasures. The content of this series is designed to immerse the reader into an interactive environment where they will be shown how to scan, test, hack and secure information systems. With the full series of books, the reader will gain in-depth knowledge and practical experience with essential security systems, and become prepared to succeed on the Certified Ethical Hacker, or C|EH, certification from EC-Council. This certification covers a plethora of offensive security topics ranging from how perimeter defenses work, to scanning and attacking simulated networks. A wide variety of tools, viruses, and malware is presented in this and the other four books, providing a complete understanding of the tactics and tools used by hackers. By gaining a thorough understanding of how hackers operate, an Ethical Hacker will be able to set up strong countermeasures and defensive systems to protect an organization's critical infrastructure and information. Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version.

A unique, full-color introduction to Linux fundamentals Serving as a low-cost, secure alternative to expensive operating systems, Linux is a UNIX-based, open source operating system. Full-color and concise, this beginner's guide takes a learning-by-doing approach to understanding the essentials of Linux. Each chapter begins by clearly identifying what you will learn in the chapter, followed by a straightforward discussion of concepts that leads you right into hands-on tutorials. Chapters conclude with additional exercises and review questions, allowing you to reinforce and measure your understanding. Offers a hands-on approach to acquiring a foundation of Linux skills, aiming to ensure Linux beginners gain a solid understanding Uses the leading Linux

distribution Fedora to demonstrate tutorials and examples Addresses Linux installation, desktop configuration, management of files and filesystems, remote administration, security, and more This book is essential reading for anyone entering the world of Linux!

Head First C"O'Reilly Media, Inc."

Do amazing things with the shell About This Book Become an expert in creating powerful shell scripts and explore the full possibilities of the shell Automate any administrative task you could imagine, with shell scripts Packed with easy-to-follow recipes on new features on Linux, particularly, Debian-based, to help you accomplish even the most complex tasks with ease Who This Book Is For If you are a beginner or an intermediate Linux user who wants to master the skill of quickly writing scripts and automate tasks without reading the entire man pages, then this book is for you. You can start writing scripts and one-liners by simply looking at the relevant recipe and its descriptions without any working knowledge of shell scripting or Linux. Intermediate / advanced users, system administrators / developers, and programmers can use this book as a reference when they face problems while coding. What You Will Learn Interact with websites via scripts Write shell scripts to mine and process data from the Web Automate system backups and other repetitive tasks with crontab Create, compress, and encrypt archives of your critical data. Configure and monitor Ethernet and wireless networks Monitor and log network and system activity Tune your system for optimal performance Improve your system's security Identify resource hogs and network bottlenecks Extract audio from video files Create web photo albums Use git or fossil to manage revision control and interact with FOSS projects Create and maintain Linux containers and Virtual Machines Run a private Cloud server In Detail The shell is the most powerful tool your computer provides. Despite having it at their fingertips, many users are unaware of how much the shell can accomplish. Using the shell, you can generate databases and web pages from sets of files, automate monotonous admin tasks such as system backups, monitor your system's health and activity, identify network bottlenecks and system resource hogs, and more. This book will show you how to do all this and much more. This book, now in its third edition, describes the exciting new features in the newest Linux distributions to help you accomplish more than you imagine. It shows how to use simple commands to automate complex tasks, automate web interactions, download videos, set up containers and cloud servers, and even get free SSL certificates. Starting with the basics of the shell, you will learn simple commands and how to apply them to real-world issues. From there, you'll learn text processing, web interactions, network and system monitoring, and system tuning. Software engineers will learn how to examine system applications, how to use modern software management tools such as git and fossil for their own work, and how to submit patches to open-source projects. Finally, you'll learn how to set up Linux Containers and Virtual machines and even run your own Cloud server with a free SSL Certificate from letsencrypt.org. Style and approach This book will take you through useful real-world recipes designed to make your daily life easier when working with the shell.

Preface The Linux Start-Up Guide has been written for both private and professional Linux users. Its purpose is to give a solid under standing of the Unix-like operating system kernel and its-system commands. This book is intended for beginners, system administrators, and people who have worked with other systems. Experienced Unix and Linux users will still find it useful, as all main Linux features have been treated extensive, reducing the need to study other documentation. Without a doubt, it is not possible to give a comprehensive description of every typical Linux tool in just 300 pages. There fore, I have concentrated on providing detailed and well struc tured explanations of the fundamental Unix commands, the most important editors, network applications, and the X Window System. I also thought it important to give a general idea of the concepts underlying each topic and to mention the historic milestones that influenced the current state of development.

What will you learn from this book? Apple's new modern programming language, Swift, is slowly becoming the "go to" language for iOS and OS X development. The language will attract existing developers because of its modern features and prototyping tools, and it will attract new developers because of its less-steep learning curve. That said, Swift is deep, and contains many advanced concepts, constructs, and patterns. Developers need a way to learn these new features and understand them in context. Head First is an effective vehicle for this level of teaching, and Head First Swift is no exception. Why does this book look so different? Based on the latest research in cognitive science and learning theory, Head First Swift uses a visually rich format to engage your mind, rather than a text-heavy approach that puts you to sleep. Why waste your time struggling with new concepts? This multi-sensory learning experience is designed for the way your brain really works.

This book is broken into four primary sections addressing key topics that Linux programmers need to master: Linux nuts and bolts, the Linux kernel, the Linux desktop, and Linux for the Web Effective examples help get readers up to speed with building software on a Linux-based system while using the tools and utilities that contribute to streamlining the software development process Discusses using emulation and virtualization technologies for kernel development and application testing Includes useful insights aimed at helping readers understand how their applications code fits in with the rest of the software stack Examines cross-compilation, dynamic device insertion and removal, key Linux projects (such as Project Utopia), and the internationalization capabilities present in the GNOME desktop

Ever wished you could learn Python from a book? Head First Python is a complete learning experience for Python that helps you learn the language through a unique method that goes beyond syntax and how-to manuals, helping you understand how to be a great Python programmer. You'll quickly learn the language's fundamentals, then move onto persistence, exception handling, web development, SQLite, data wrangling, and Google App Engine. You'll also learn how to write mobile apps for Android, all thanks to the power that Python gives you. We think your time is too valuable to waste struggling with new.

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This book provides thorough knowledge of Linux TCP/IP stack and kernel framework for its network stack, including complete knowledge of design and implementation. Starting with simple client-server socket programs and progressing to complex design and implementation of TCP/IP protocol in linux, this book provides different aspects of socket programming and major TCP/IP related algorithms. In addition, the text features netfilter hook framework, a complete explanation of routing sub-system, IP QOS implementation, and Network Soft IRQ. This book further contains elements on TCP state machine implementation,TCP timer implementation on Linux, TCP memory management on Linux, and debugging TCP/IP stack using lcrash

There's a great deal of excitement surrounding the use of Linux in embedded systems -- for everything from cell phones to car

ABS systems and water-filtration plants -- but not a lot of practical information. Building Embedded Linux Systems offers an in-depth, hard-core guide to putting together embedded systems based on Linux. Updated for the latest version of the Linux kernel, this new edition gives you the basics of building embedded Linux systems, along with the configuration, setup, and use of more than 40 different open source and free software packages in common use. The book also looks at the strengths and weaknesses of using Linux in an embedded system, plus a discussion of licensing issues, and an introduction to real-time, with a discussion of real-time options for Linux. 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 Using the uClibc, BusyBox, U-Boot, OpenSSH, tftpd, tftp, strace, and gdb packages By presenting how to build the operating system components from pristine sources and how to find more documentation or help, Building Embedded Linux Systems greatly simplifies the task of keeping complete control over your embedded operating system.

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

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