

Developing Drivers With The Windows Driver Foundation Developer Reference

"Raymond Chen is the original raconteur of Windows." --Scott Hanselman, ComputerZen.com "Raymond has been at Microsoft for many years and has seen many nuances of Windows that others could only ever hope to get a glimpse of. With this book, Raymond shares his knowledge, experience, and anecdotal stories, allowing all of us to get a better understanding of the operating system that affects millions of people every day. This book has something for everyone, is a casual read, and I highly recommend it!" --Jeffrey Richter, Author/Consultant, Cofounder of Wintellect "Very interesting read. Raymond tells the inside story of why Windows is the way it is." --Eric Gunnerson, Program Manager, Microsoft Corporation "Absolutely essential reading for understanding the history of Windows, its intricacies and quirks, and why they came about." --Matt Pietrek, MSDN Magazine's Under the Hood Columnist "Raymond Chen has become something of a legend in the software industry, and in this book you'll discover why. From his high-level reminiscences on the design of the Windows Start button to his low-level discussions of GlobalAlloc that only your inner-geek could love, The Old New Thing is a captivating collection of anecdotes that will help you to truly appreciate the difficulty inherent in designing and writing quality software." --Stephen Toub, Technical Editor, MSDN Magazine Why does Windows work the way it does? Why is Shut Down on the Start menu? (And why is there a Start button, anyway?) How can I tap into the dialog loop? Why does the GetWindowText function behave so strangely? Why are registry files called "hives"? Many of Windows' quirks have perfectly logical explanations, rooted in history. Understand them, and you'll be more productive and a lot less frustrated. Raymond Chen--who's spent more than a decade on Microsoft's Windows development team--reveals the "hidden Windows" you need to know. Chen's engaging style, deep insight, and thoughtful humor have made him one of the world's premier technology bloggers. Here he brings together behind-the-scenes explanations, invaluable technical advice, and illuminating anecdotes that bring Windows to life--and help you make the most of it. A few of the things you'll find inside: What vending machines can teach you about effective user interfaces A deeper understanding of window and dialog management Why performance optimization can be so counterintuitive A peek at the underbelly of COM objects and the Visual C++ compiler Key details about backwards compatibility--what Windows does and why Windows program security holes most developers don't know about How to make your program a better Windows citizen

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

This superb introduction to device drivers describes what device drivers do, how they interface with DOS, and provides examples and techniques for building a collection of device drivers that can be customized for individual use.

Provides guidance and code samples to develop kernel-mode or user-mode drivers with Windows Driver Foundation.

Master the new Windows Driver Model (WDM) common to Windows 98 and Windows 2000. You get theory, instruction and practice in driver development, installation and debugging. Addresses hardware and software interface issues, driver types, and a description of the new 'layer' model of WDM. ;

Newly 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)

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 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 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 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 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.

The Microsoft® Windows® driver model (WDM) supports Plug and Play, provides power management capabilities, and expands on the driver/minidriver approach. Written by long-time device-driver expert Walter Oney in cooperation with the Windows kernel team, this book provides extensive practical examples, illustrations, advice, and line-by-line analysis of code samples to clarify real-world driver-programming issues. And it's been updated with the latest details about the driver technologies in Windows XP and Windows 2000, plus more information about how to debug drivers. Topics covered include: Beginning a driver project and the structure of a WDM driver; NEW: Minidrivers and class drivers, driver taxonomy, the WDM development environment and tools, management checklist, driver selection and loading, approved API calls, and driver stacks Basic programming techniques; NEW: Safe string functions, memory limits, the Driver Verifier scheme and tags, the kernel handle flag, and the Windows 98 floating-point problem Synchronization; NEW: Details about the interrupt request level (IRQL) scheme, along with Windows 98 and Windows Me compatibility The I/O request packet (IRP) and I/O control operations; NEW: How to send control operations to other drivers, custom queue implementations, and how to handle and safely cancel IRPs Plug and Play for function drivers; NEW: Controller and multifunction devices, monitoring device removal in user mode, Human Interface Devices (HID), including joysticks and other game controllers, minidrivers for non-HID devices, and feature reports Reading and writing data, power management, and Windows Management Instrumentation (WMI) NEW: System wakeup, the WMI control for idle detection, and using WMIMOFCK Specialized topics and distributing drivers; NEW: USB 2.0, selective suspend, Windows Hardware Quality Lab (WHQL) certification, driver selection and loading, officially approved API calls, and driver stacks COVERS WINDOWS 98, WINDOWS ME, WINDOWS 2000, AND WINDOWS XP! CD-ROM FEATURES: A fully searchable electronic copy of the book Sample code in Microsoft Visual C++® A Note Regarding the CD or DVD The print version of this book ships with a CD or DVD. For those customers purchasing one of the digital formats in which this book is available, we are pleased to offer the CD/DVD content as a free download via O'Reilly Media's Digital Distribution services. To download this content, please visit O'Reilly's web site, search for the title of this book to find its catalog page, and click on the link below the cover image (Examples, Companion Content, or Practice Files). Note that while we provide as much of the media content as we are able via free download, we are sometimes limited by licensing restrictions. Please direct

any questions or concerns to booktech@oreilly.com.

The first authoritative guide to programming Windows 7 device drivers: save time, save money, and write more reliable drivers • Shows experienced programmers how to make the most of Microsoft's latest and most powerful models and tools for Windows 7 driver development, including C# and Visual Studio 2010. • Thoroughly covers Microsoft's Windows Driver Foundation (WDF) Architecture. • There are no other books, and little information anywhere, about Windows 7 device drivers. This is the only comprehensive, state-of-the-art guide to writing Windows 7 device drivers. Written by Ronald Reeves, one of the field's leading experts, Windows 7 Device Driver Book helps experienced developers make the most of the powerful new tools and models Microsoft has made available for driver development. Reeves provides an extensive collection of sample code on CDROM, as well as best-practice guidance for maximizing reliability and performance. Reeves shows how C# and Visual Studio 2010 can be used to develop device drivers more rapidly, and debug them more effectively. He covers a broad array of topics, including both kernel- and user-mode driver development; Windows Driver Foundation (WDF) architecture, and much more. From start to finish, this book is designed to significantly reduce the time it takes for device driver programmers to find the information they need -- and then apply that information in reliable, production code.

This book follows on from Linux Kernel Programming, helping you explore the Linux character device driver framework and enables you to write 'misc' class drivers. You'll learn how to efficiently interface with user apps, perform I/O on hardware memory, handle hardware interrupts, and leverage kernel delays, timers, kthreads, and workqueues.

For developers who must know and understand the fundamentals to be able to apply the more advanced aspects that will emerge with NT 5, here is an in-depth book to the rescue, covering the core techniques of programming NT device drivers.

Use Windows debuggers throughout the development cycle—and build better software Rethink your use of Windows debugging and tracing tools—and learn how to make them a key part of test-driven software development. Led by a member of the Windows Fundamentals Team at Microsoft, you'll apply expert debugging and tracing techniques—and sharpen your C++ and C# code analysis skills—through practical examples and common scenarios. Learn why experienced developers use debuggers in every step of the development process, and not just when bugs appear. Discover how to: Go behind the scenes to examine how powerful Windows debuggers work Catch bugs early in the development cycle with static and runtime analysis tools Gain practical strategies to tackle the most common code defects Apply expert tricks to handle user-mode and kernel-mode debugging tasks Implement postmortem techniques such as JIT and dump debugging Debug the concurrency and security aspects of your software Use debuggers to analyze interactions between your code and the operating system Analyze software behavior with Xperf and the Event Tracing for Windows (ETW) framework

Get Expert Insights For Mastering The Intricacies Of The Windows Driver Foundation. This In-Depth Reference Delivers Strategic Guidance And Practical Advice For Developing Drivers For The Windows Platform. Code Samples In Microsoft Visual C++®. Master The

Windows Embedded Compact 7 is the natural choice for developing sophisticated, small-footprint devices for both consumers and the enterprise. For this latest version, a number of significant enhancements have been made, most notably the ability to run multi-core processors and address more than the 512 MB of memory constraint in previous versions. Using familiar developer tools, Pro Windows Embedded Compact 7 will take you on a deep-dive into device driver development. You'll learn how to set up your working environment, the tools that you'll need and how to think about developing for small devices before quickly putting theory into practice and developing your own first driver from the ground up. As you delve deeper into the details of driver development, you'll learn how to master hardware details, deal with I/O and interrupts, work with networks, and test and debug your drivers ready for deployment—all in the company of an author who's been working with Windows CE for more than a decade. Packed with code samples, Pro Windows Embedded Compact 7 contains everything you'll need to start developing for small footprint devices with confidence.

Describes how to put software security into practice, covering such topics as risk analysis, coding policies, Agile Methods, cryptographic standards, and threat tree patterns.

C has quickly become the most popular programming language. This timely handbook now supplies complete instructions for creating DOS device drivers in this versatile language, thus providing a simplified way to standardize the electrical and mechanical requirements of peripherals. Presents a logical, easy-to-implement, uniform approach for creating all device drivers and features numerous operational examples.

The Definitive Guide to Windows API Programming, Fully Updated for Windows 7, Windows Server 2008, and Windows Vista Windows System Programming, Fourth Edition, now contains extensive new coverage of 64-bit programming, parallelism, multicore systems, and many other crucial topics. Johnson Hart's robust code examples have been updated and streamlined throughout. They have been debugged and tested in both 32-bit and 64-bit versions, on single and multiprocessor systems, and under Windows 7, Vista, Server 2008, and Windows XP. To clarify program operation, sample programs are now illustrated with dozens of screenshots. Hart systematically covers Windows externals at the API level, presenting practical coverage of all the services Windows programmers need, and emphasizing how Windows functions actually behave and interact in real-world applications. Hart begins with features used in single-process applications and gradually progresses to more sophisticated functions and multithreaded environments. Topics covered include file systems, memory management, exceptions, processes, threads, synchronization, interprocess communication, Windows services, and security. New coverage in this edition includes Leveraging parallelism and maximizing performance in multicore systems Promoting source code portability and application interoperability across Windows, Linux, and UNIX Using 64-bit address spaces and ensuring 64-bit/32-bit portability Improving performance and scalability using threads, thread pools, and completion ports Techniques to improve program reliability and performance in all systems Windows performance-enhancing API features available starting with Windows Vista, such as slim reader/writer locks and condition variables A companion Web site, jmhartsoftware.com, contains all sample code, Visual Studio projects, additional examples, errata, reader comments, and Windows commentary and discussion.

Shows developers how COM operates and how to use it to create efficient and stable programs consistent with the COM philosophy, allowing disparate applications and components to work together across a variety of languages, platforms, and host machines. Original. (Advanced).

An exhaustive technical manual outlines the Windows NT concepts related to drivers; shows how to develop the best drivers for particular applications; covers the I/O Subsystem and implementation of standard kernel mode drivers; and more. Original. (Intermediate).

Over 30 recipes to develop custom drivers for your embedded Linux applications. Key Features Use Kernel facilities to develop powerful drivers Via a practical approach, learn core concepts of developing device drivers Program a custom character device to get access to kernel internals Book Description Linux is a unified kernel that is widely used to develop embedded systems.

As Linux has turned out to be one of the most popular operating systems used, the interest in developing proprietary device drivers has also increased. Device drivers play a critical role in how the system performs and ensures that the device works in the manner intended. By offering several examples on the development of character devices and how to use other kernel internals, such as interrupts, kernel timers, and wait queue, as well as how to manage a device tree, you will be able to add proper management for custom peripherals to your embedded system. You will begin by installing the Linux kernel and then configuring it. Once you have installed the system, you will learn to use the different kernel features and the character drivers. You will also cover interrupts in-depth and how you can manage them. Later, you will get into the kernel internals required for developing applications. Next, you will implement advanced character drivers and also become an expert in writing important Linux device drivers. By the end of the book, you will be able to easily write a custom character driver and kernel code as per your requirements. What you will learn Become familiar with the latest kernel releases (4.19+/5.x) running on the ESPRESSObin devkit, an ARM 64-bit machine Download, configure, modify, and build kernel sources Add and remove a device driver or a module from the kernel Master kernel programming Understand how to implement character drivers to manage different kinds of computer peripherals Become well versed with kernel helper functions and objects that can be used to build kernel applications Acquire a knowledge of in-depth concepts to manage custom hardware with Linux from both the kernel and user space Who this book is for This book will help anyone who wants to develop their own Linux device drivers for embedded systems. Having basic hand-on with Linux operating system and embedded concepts is necessary.

Python for the Lab is the first book covering how to develop instrumentation software. It is ideal for researchers willing to automatize their setups and bring their experiments to the next level. The book is the product of countless workshops at different universities, and a carefully design pedagogical strategy. With an easy to follow and task-oriented design, the book uncovers all the best practices in the field. It also shows how to design code for long-term maintainability, opening the doors of fruitful collaboration among researchers from different labs.

Start developing robust drivers with expert guidance from the teams who developed Windows Driver Foundation. This comprehensive book gets you up to speed quickly and goes beyond the fundamentals to help you extend your Windows development skills. You get best practices, technical guidance, and extensive code samples to help you master the intricacies of the next-generation driver model—and simplify driver development. Discover how to: Use the Windows Driver Foundation to develop kernel-mode or user-mode drivers Create drivers that support Plug and Play and power management—with minimal code Implement robust I/O handling code Effectively manage synchronization and concurrency in driver code Develop user-mode drivers for protocol-based and serial-bus-based devices Use USB-specific features of the frameworks to quickly develop drivers for USB devices Design and implement kernel-mode drivers for DMA devices Evaluate your drivers with source code analysis and static verification tools Apply best practices to test, debug, and install drivers PLUS—Get driver code samples on the Web The quick way to learn Windows 10 This is learning made easy. Get more done quickly with Windows 10. Jump in wherever you need answers--brisk lessons and colorful screenshots show you exactly what to do, step by step. Discover fun and functional Windows 10 features! Work with the new, improved Start menu and Start screen Learn about different sign-in methods Put the Cortana personal assistant to work for you Manage your online reading list and annotate articles with the new browser, Microsoft Edge Help safeguard your computer, your information, and your privacy Manage connections to networks, devices, and storage resources

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 be interested in.

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

“Probably the most wide ranging and complete Linux device driver book I’ve read.” --Alan Cox, Linux Guru and Key Kernel Developer “Very comprehensive and detailed, covering almost every single Linux device driver type.” --Theodore Ts’o, First Linux Kernel Developer in North America and Chief Platform Strategist of the Linux Foundation The Most Practical Guide to Writing Linux Device Drivers Linux now offers an exceptionally robust environment for driver development: with today’s kernels, what once required years of development time can be accomplished in days. In this practical, example-driven book, one of the world’s most experienced Linux driver developers systematically demonstrates how to develop reliable Linux drivers for virtually any device. Essential Linux Device Drivers is for any programmer with a working knowledge of operating systems and C, including programmers who have never written drivers before. Sreekrishnan Venkateswaran focuses on the essentials, bringing together all the concepts and techniques you need, while avoiding topics that only matter in highly specialized situations. Venkateswaran begins by reviewing the Linux 2.6 kernel capabilities that are most relevant to driver developers. He introduces simple device classes; then turns to serial buses such as I2C and SPI; external buses such as PCMCIA, PCI, and USB; video, audio, block, network, and wireless device drivers; user-space drivers; and drivers for embedded Linux—one of today’s fastest growing areas of Linux development. For each, Venkateswaran explains the technology, inspects relevant kernel source files, and walks through developing a complete example. • Addresses drivers discussed in no other book, including drivers for I2C, video, sound, PCMCIA, and different types of flash memory • Demystifies essential kernel services and facilities, including kernel threads and helper interfaces • Teaches polling, asynchronous notification, and I/O control • Introduces the Inter-Integrated Circuit Protocol for embedded Linux drivers • Covers multimedia device drivers using the Linux-Video subsystem and Linux-Audio framework • Shows how Linux implements support for wireless technologies such as Bluetooth, Infrared, WiFi, and cellular networking • Describes the entire driver development lifecycle, through debugging and maintenance • Includes reference appendixes covering Linux assembly, BIOS calls, and Seq files

Delve inside Windows architecture and internals—and see how core components work behind the scenes. Led by three renowned internals experts, this classic guide is fully updated for Windows 7 and Windows Server 2008 R2—and now presents its coverage in two volumes. As always, you get critical insider perspectives on how Windows operates.

And through hands-on experiments, you'll experience its internal behavior firsthand—knowledge you can apply to improve application design, debugging, system performance, and support. In Part 2, you'll examine: Core subsystems for I/O, storage, memory management, cache manager, and file systems Startup and shutdown processes Crash-dump analysis, including troubleshooting tools and techniques

Developing Drivers with the Windows Driver Foundation Microsoft Press

“The chapter on programming a KMDF hardware driver provides a great example for readers to see a driver being made.” –Patrick Regan, network administrator, Pacific Coast Companies The First Authoritative Guide to Writing Robust, High-Performance Windows 7 Device Drivers Windows 7 Device Driver brings together all the information experienced programmers need to build exceptionally reliable, high-performance Windows 7 drivers. Internationally renowned driver development expert Ronald D. Reeves shows how to make the most of Microsoft's powerful new tools and models; save time and money; and efficiently deliver stable, robust drivers. Drawing on his unsurpassed experience as both a driver developer and instructor, Reeves demystifies Kernel and User Mode Driver development, Windows Driver Foundation (WDF) architecture, driver debugging, and many other key topics. Throughout, he provides best practices for all facets of the driver development process, illuminating his insights with proven sample code. Learn how to Use WDF to reduce development time, improve system stability, and enhance serviceability Take full advantage of both the User Mode Driver Framework (UMDF) and the Kernel Mode Driver Framework (KMDF) Implement best practices for designing, developing, and debugging both User Mode and Kernel Mode Drivers Manage I/O requests and queues, self-managed I/O, synchronization, locks, plug-and-play, power management, device enumeration, and more Develop UMDF drivers with COM Secure Kernel Mode Drivers with safe defaults, parameter validation, counted UNICODE strings, and safe device naming techniques Program and troubleshoot WMI support in Kernel Mode Drivers Utilize advanced multiple I/O queuing techniques Whether you're creating Windows 7 drivers for laboratory equipment, communications hardware, or any other device or technology, this book will help you build production code more quickly and get to market sooner!

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

Developing Windows NT Device Drivers: A Programmer's Handbook offers programmers a comprehensive and in-depth guide to building device drivers for Windows NT. Written by two experienced driver developers, Edward N. Dekker and Joseph M. Newcomer, this book provides detailed coverage of techniques, tools, methods, and pitfalls to help make the often complex and byzantine "black art" of driver development straightforward and accessible. This book is designed for anyone involved in the development of Windows NT Device Drivers, particularly those working on drivers for nonstandard devices that Microsoft has not specifically supported. Because Windows NT does not permit an application program to directly manipulate hardware, a customized kernel mode device driver must be created for these nonstandard devices. And since experience has clearly shown that superficial knowledge can be hazardous when developing device drivers, the authors have taken care to explore each relevant topic in depth. This book's coverage focuses on drivers for polled, programmed I/O, interrupt-driven, and DMA devices. The authors discuss the components of a kernel mode device driver for Windows NT, including background on the two primary bus interfaces used in today's computers: the ISA and PCI buses. Developers will learn the mechanics of compilation and linking, how the drivers register themselves with the system, experience-based techniques for debugging, and how to build robust, portable, multithread- and multiprocessor-safe device drivers that work as intended and won't crash the system. The authors also show how to call the Windows NT kernel for the many services required to support a device driver and demonstrate some specialized techniques, such as mapping device memory or kernel memory into user space. Thus developers will not only learn the specific mechanics of high-quality device driver development for Windows NT, but will gain a deeper understanding of the foundations of device driver design.

This is the eBook of the printed book and may not include any media, website access codes, or print supplements that may come packaged with the bound book. Conquer

today's Windows 10—from the inside out! Dive into Windows 10—and really put your Windows expertise to work. Focusing on the most powerful and innovative features of Windows 10, this supremely organized reference packs hundreds of timesaving solutions, tips, and workarounds—all fully reflecting the major Windows 10 Anniversary Update. From new Cortana and Microsoft Edge enhancements to the latest security and virtualization features, you'll discover how experts tackle today's essential tasks—and challenge yourself to new levels of mastery. Install, configure, and personalize the newest versions of Windows 10 Understand Microsoft's revamped activation and upgrade processes Discover major Microsoft Edge enhancements, including new support for extensions Use today's improved Cortana services to perform tasks, set reminders, and retrieve information Make the most of the improved ink, voice, touch, and gesture support in Windows 10 Help secure Windows 10 in business with Windows Hello and Azure AD Deploy, use, and manage new Universal Windows Platform (UWP) apps Take advantage of new entertainment options, including Groove Music Pass subscriptions and connections to your Xbox One console Manage files in the cloud with Microsoft OneDrive and OneDrive for Business Use the improved Windows 10 Mail and Calendar apps and the new Skype app Fine-tune performance and troubleshoot crashes Master high-efficiency tools for managing Windows 10 in the enterprise Leverage advanced Hyper-V features, including Secure Boot, TPMs, nested virtualization, and containers In addition, this book is part of the Current Book Service from Microsoft Press. Books in this program will receive periodic updates to address significant software changes for 12 to 18 months following the original publication date via a free Web Edition. Learn more at <https://www.microsoftpressstore.com/cbs>.

Delve inside Windows architecture and internals - and see how core components work behind the scenes. This classic guide has been fully updated for Windows 8.1 and Windows Server 2012 R2, and now presents its coverage in three volumes: Book 1, User Mode; Book 2, Kernel Mode; Book 3, Device Driver Models. In Book 1, you'll plumb Windows fundamentals, independent of platform - server, desktop, tablet, phone, Xbox. Coverage focuses on high-level functional descriptions of the various Windows components and features that interact with, or are manipulated by, user mode programs, or applications. You'll also examine management mechanisms and operating system components that are implemented in user mode, such as service processes. As always, you get critical insider perspectives on how Windows operates. And through hands-on experiments, you'll experience its internal behavior firsthand - knowledge you can apply to improve application design, debugging, system performance, and support. Planned chapters: Concepts & Tools; System Architecture; Windows Application Support; Windows Store Apps; Graphics & the Desktop; Management Mechanisms; User Mode Memory Management; Security; Storage; Networking; Hyper-V.

An exploration of why people all over the world love to engage in pain on purpose--from dominatrices, religious ascetics, and ultramarathoners to ballerinas, icy ocean bathers, and sideshow performers Masochism is sexy, human, reviled, worshipped, and can be delightfully bizarre. Deliberate and consensual pain has been with us for millennia, encompassing everyone from Black Plague flagellants to ballerinas dancing on broken bones to competitive eaters choking down hot peppers while they cry. Masochism is a part of us. It lives inside workaholics, tattoo enthusiasts, and all manner of garden variety pain-seekers. At its core, masochism is about feeling bad, then better—a phenomenon that is long overdue for a heartfelt and hilarious investigation. And Leigh Cowart would know: they are not just a researcher and science writer—they're an inveterate, high-sensation seeking masochist. And they have a few questions: Why do people engage in masochism? What are the benefits and the costs? And what does masochism have to say about the human experience? By participating in many of these activities themselves, and through conversations with psychologists, fellow scientists, and people who seek pain for pleasure, Cowart unveils how our minds and bodies find meaning and relief in pain—a quirk in our programming that drives discipline and innovation even as it threatens to swallow us whole.

An authoritative guide to Windows NT driver development, now completely revised and updated. The CD-ROM includes all source code, plus Microsoft hardware standards documents, demo software, and more.

Illustrates the new features of Windows 10.

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).

Software developer and author Karen Hazzah expands her original treatise on device drivers in the second edition of Writing Windows VxDs and Device Drivers. The book and companion disk include the author's library of wrapper functions that allow the progr

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

Kernel Module (LKM) framework. The book then covers key kernel internals topics including Linux kernel architecture, memory management, and CPU scheduling. Next, you'll delve into the fairly complex topic of concurrency within the kernel, understand the issues it can cause, and learn how they can be addressed with various locking technologies (mutexes, spinlocks, atomic, and refcount operators). You'll also benefit from more advanced material on cache effects, a primer on lock-free techniques within the kernel, deadlock avoidance (with lockdep), and kernel lock debugging techniques. By the end of this kernel book, you'll have a detailed understanding of the fundamentals of writing Linux kernel module code for real-world projects and products. What you will learn Write high-quality modular kernel code (LKM framework) for 5.x kernels Configure and build a kernel from source Explore the Linux kernel architecture Get to grips with key internals regarding memory management within the kernel Understand and work with various dynamic kernel memory alloc/dealloc APIs Discover key internals aspects regarding CPU scheduling within the kernel Gain an understanding of kernel concurrency issues Find out how to work with key kernel synchronization primitives Who this book is for This book is for Linux programmers beginning to find their way with Linux kernel development. Linux kernel and driver developers looking to overcome frequent and common kernel development issues, as well as understand kernel internals, will benefit from this book. A basic understanding of Linux CLI and C programming is required.

Authored by two of the leading authorities in the field, this guide offers readers the knowledge and skills needed to achieve proficiency with embedded software.

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