

Developing Drivers With The Windows Driver Foundation Pro Developer

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. ;

"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

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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

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

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

This report focuses on how human development can be ensured for everyone, now and in future. It starts with an account of the hopes and challenges of today's world, envisioning where humanity wants to go. This vision draws from and builds on the 2030 Agenda and the Sustainable Development Goals. It explores who has been left behind in human development progress and why. It argues that to ensure that human development

is achieved for all, we need to ensure that human development is achieved for all, now and in future. It starts with an account of the hopes and challenges of today's world, envisioning where humanity wants to go. This vision draws from and builds on the 2030 Agenda and the Sustainable Development Goals. It explores who has been left behind in human development progress and why. It argues that to ensure that human development

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reaches everyone, some aspects of the human development framework and assessment perspectives have to be brought to the fore. The Report also identifies the national policies and key strategies to ensure that will enable every human being achieve at least basic human development and to sustain and protect the gains.

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).

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

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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.

Presents an introduction to the open-source electronics prototyping platform.

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

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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

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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.

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.

Developing Drivers with the Windows Driver Foundation
Microsoft Press

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

The Definitive Guide to Windows API Programming,

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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

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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.

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

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

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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.

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New evidence this year corroborates the rise in world hunger observed in this report last year, sending a warning that more action is needed if we aspire to end world hunger and malnutrition in all its forms by 2030. Updated estimates show the number of people who suffer from hunger has been growing over the past three years, returning to prevailing levels from almost a decade ago. Although progress continues to be made in reducing child stunting, over 22 percent of children under five years of age are still affected. Other forms of malnutrition are also growing: adult obesity continues to increase in countries irrespective of their income levels, and many countries are coping with multiple forms of malnutrition at the same time – overweight and obesity, as well as anaemia in women, and child stunting and wasting.

“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

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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! "Look it up in Petzold" remains the decisive last word in answering questions about Windows development. And in PROGRAMMING WINDOWS, FIFTH EDITION, the esteemed Windows Pioneer Award winner revises his classic text with authoritative coverage of the latest versions of the Windows operating system—once again drilling down to the essential API heart of Win32 programming. Topics include: The basics—input, output, dialog boxes An introduction to Unicode Graphics—drawing, text and fonts, bitmaps and metafiles The kernel and the printer Sound and music Dynamic-link libraries Multitasking and multithreading The

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Multiple-Document Interface Programming for the Internet and intranets Packed as always with definitive examples, this newest Petzold delivers the ultimate sourcebook and tutorial for Windows programmers at all levels working with Microsoft Windows 95, Windows 98, or Microsoft Windows NT. No aspiring or experienced developer can afford to be without it. An electronic version of this book is available on the companion CD. For customers who purchase an ebook version of this title, instructions for downloading the CD files can be found in the ebook.

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

Illustrates the new features of Windows 10.

For developers who must know and understand the fundamentals to be able to apply the more advanced aspects

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that will emerge with NT 5, here is an in-depth book to the rescue, covering the core techniques of programming NT device drivers.

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

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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.

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.

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.

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

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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

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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

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

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.

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

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 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

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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 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

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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.

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

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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.

DEVELOPMENT KIT gives you the most complete, concise set of design and reference documentation you can find about developing drivers for the Windows 2000 family of operating systems. It also delivers sample source code and resources for developing Windows Driver Model (WDM) drivers that support both Windows 2000 and Windows 98, and it provides links to supporting information on the Microsoft Web site. This three-volume set is the only printed version of these essential resources. It includes: MICROSOFT WINDOWS 2000 DRIVER DESIGN GUIDE Get the technical know-how you need to write drivers for Windows 2000 or Windows 98 with this volume. It contains vital information about the driver development environment and the driver BUILD utility (included on CD-ROM), and it shows you how to use the Windows 2000 Driver

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Verifier to build, test, and debug Windows 2000 drivers. It describes how to create Windows Driver Model (WDM) drivers that are source-level compatible between Windows 2000 and Windows 98. It covers the special Plug and Play and power-management features of Windows 2000, describes how to support setup and installation of devices, and gives you the particulars about how to write kernel-mode, graphics, and network drivers.

MICROSOFT WINDOWS 2000 DRIVER DEVELOPMENT REFERENCE VOLUME 1 Developing reliable drivers—the most essential part of any operating system—requires good documentation. Open this volume to get complete, authoritative reference information about Plug and Play, power-management, and setup driver support in Windows 2000.

MICROSOFT WINDOWS 2000 DRIVER DEVELOPMENT REFERENCE VOLUME 2 Open this volume to get authoritative reference information about kernel-mode drivers, including drivers for input devices, devices that use serial and parallel ports, and devices that use USB, IEEE 1394, and

“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

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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,

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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

The MICROSOFT WINDOWS 2000 DRIVER DEVELOPMENT KIT gives you the most complete, concise set of design and reference documentation you can find about developing drivers for the Windows 2000 family of operating systems. It also delivers sample source code and resources for developing Windows Driver Model (WDM) drivers that support both Windows 2000 and Windows 98, and it provides links to supporting information on the Microsoft Web site. This three-volume set is the only printed version of these essential resources. It includes:

MICROSOFT WINDOWS 2000 DRIVER DESIGN GUIDE Get the technical know-how you need to write drivers for Windows 2000 or Windows 98 with this volume. It contains vital information

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about the driver development environment and the driver BUILD utility (included on CD-ROM), and it shows you how to use the Windows 2000 Driver Verifier to build, test, and debug Windows 2000 drivers. It describes how to create Windows Driver Model (WDM) drivers that are source-level compatible between Windows 2000 and Windows 98. It covers the special Plug and Play and power-management features of Windows 2000, describes how to support setup and installation of devices, and gives you the particulars about how to write kernel-mode, graphics, and network drivers.

MICROSOFT WINDOWS 2000 DRIVER DEVELOPMENT REFERENCE VOLUME 1 Developing reliable drivers—the most essential part of any operating system—requires good documentation. Open this volume to get complete, authoritative reference information about Plug and Play, power-management, and setup driver support in Windows 2000.

MICROSOFT WINDOWS 2000 DRIVER DEVELOPMENT REFERENCE VOLUME 2 Open this volume to get authoritative reference information about kernel-mode drivers, including drivers for input devices, devices that use serial and parallel ports, and devices that use USB

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

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together across a variety of languages, platforms, and host machines. Original. (Advanced).

Take a deep dive into the world of Windows desktop deployment using the Microsoft Deployment Toolkit

About This Book Learn Microsoft Deployment Toolkit best practices and how to adopt them into your deployment project Troubleshoot task sequence errors and quickly resolve deployment blockers An easy-to-follow, in-depth guide to image creation, customization, and deployment of Windows Who This Book Is For This book is ideal for those deploying or planning to deploy Windows, in need of a top-to-bottom guide on project deployment. It is also an invaluable resource for consultants who need a top-to-bottom guide (or just a refresher) on project deployment. What You Will Learn Build a production-ready MDT environment Administer the environment for multiple users Customize your reference image with an MDT Task Sequence Create standalone media for offline deployments Customize the default user profile according to the version of Windows Get to grips with some troubleshooting steps and processes to reduce the time for recovery of a failed image Customize and create Windows images for deployment Discover useful tips and tricks to help save time in your deployment projects In Detail The Microsoft Deployment Toolkit (MDT) provides a comprehensive collection of tools, processes, and

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guidance for automating desktop and server deployments. It considerably reduces deployment time and standardizes desktop and server images. Moreover, MDT offers improved security and ongoing configuration management. Microsoft Deployment Toolkit is the official supported method of creating and customizing Windows images for deployment. Starting from scratch, this book walks you through the MDT setup, task sequence creation, and image deployment steps in detail. Breaking down the various MDT concepts, this book will give you a thorough understanding of the deployment process. Beginning with imaging concepts and theory, you will go on to build a Microsoft Deployment Toolkit environment. You will understand the intricacies of customizing the default user profile in different versions of Windows. Driver handling can be a challenge for larger organizations; we'll cover various driver concepts including mandatory driver profiles.]Other important topics like the User State Migration Tool (USMT), configuration of XML files, and how to troubleshoot the USMT are also discussed in the book. We will cover the verifier and Windows Performance Toolkit for image validation scenarios. Furthermore, you will learn about MDT web frontend implementation as well as how to utilize the database capabilities of MDT for deeper deployment options. We'll wrap it all up with some links to resources for more information, blogs

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to watch, and useful Twitter handles. Style and approach This is a comprehensive guide written using a step-by-step approach. It begins with the basics and gradually moves on to the advanced topics MDT.

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.

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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.

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