

# Developing Drivers With The Windows Driver Foundation Pro Developer

Analyzing how hacks are done, so as to stop them in the future Reverse engineering is the process of analyzing hardware or software and understanding it, without having access to the source code or design documents. Hackers are able to reverse engineer systems and exploit what they find with scary results. Now the goodguys can use the same tools to thwart these threats. Practical Reverse Engineering goes under the hood of reverse engineering for security analysts, security engineers, and system programmers, so they can learn how to use these same processes to stop hackers in their tracks. The book covers x86, x64, and ARM (the first book to cover all three); Windows kernel-mode code rootkits and drivers; virtual machine protection techniques; and much more. Best of all, it offers a systematic approach to the material, with plenty of hands-on exercises and real-world examples. Offers a systematic approach to understanding reverse engineering, with hands-on exercises and real-world examples Covers x86, x64, and advanced RISC machine (ARM) architectures as well as deobfuscation and virtual machine protection techniques Provides special coverage of Windows kernel-mode code (rootkits/drivers), a topic not often covered elsewhere, and explains how to analyze drivers step by step Demystifies topics that have a steep learning curve Includes a bonus chapter on reverse engineering tools Practical Reverse Engineering: Using x86, x64, ARM, Windows Kernel, and Reversing Tools provides crucial, up-to-date guidance for a broad range of IT professionals.

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](mailto:booktech@oreilly.com). See how the core components of the Windows operating system work behind the scenes—guided by a team of internationally renowned internals experts. Fully updated for Windows Server(R) 2008 and Windows Vista(R), this classic guide delivers key architectural insights on system design, debugging, performance, and support—along with hands-on experiments to experience Windows internal behavior firsthand. Delve inside Windows architecture and internals: Understand how the core system and management mechanisms work—from the object manager to services to the registry Explore internal system data structures using tools like the kernel debugger Grasp the scheduler's priority and CPU placement algorithms Go inside the Windows security model to see how it authorizes access to data Understand how Windows manages physical and virtual memory Tour the Windows networking stack from top to bottom—including APIs, protocol drivers, and network adapter drivers Troubleshoot file-system access problems and system boot problems Learn how to analyze crashes 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

Programming Windows

Producing Device Drivers

Windows 10 Inside Out (includes Current Book Service)

Writing Windows WDM Device Drivers

Develop customized drivers for embedded Linux

Inside Windows NT

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

Microsoft Windows NT is the foundation of the new 32-bit operating system designed to support the most powerful workstation and server systems. The initial developer support for Windows NT has been phenomenal--developers have demonstrated more than 50 Windows NT applications only months after receiving the pre-release version of the software. This authoritative text--by a member of the Windows NT development group--is a richly detailed technical overview of the design goals and architecture of Windows NT. (Operating Systems)

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.

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

### Writing Windows Device Drivers

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

### Writing MS-DOS Device Drivers

### Subverting the Windows Kernel

A Guide for Programmers

### Developing Windows NT Device Drivers

While forensic analysis has proven to be a valuable investigative tool in the field of computer security, utilizing anti-forensic technology makes it possible to maintain a covert operational foothold for extended periods, even in a high-security environment. Adopting an approach that favors full disclosure, the updated Second Edition of The Rootkit Arsenal presents the most accessible, timely, and complete coverage of forensic countermeasures. This book covers more topics, in greater depth, than any other currently available. In doing so the author forges through the murky back alleys of the Internet, shedding light on material that has traditionally been poorly documented, partially documented, or intentionally undocumented. The range of topics presented includes how to:

- Evade post-mortem analysis
- Frustrate attempts to reverse engineer your command & control modules
- Defeat live incident response
- Undermine the process of memory analysis
- Modify subsystem internals to feed misinformation to the outside
- Entrench your code in fortified regions of execution
- Design and implement covert channels
- Unearth new avenues of attack

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, [jnhartsoftware.com](http://jnhartsoftware.com), contains all sample code, Visual Studio projects, additional examples, errata, reader comments, and Windows commentary and discussion. The object of this book is to cover most of the currently relevant areas of data communications and networks. These include: Communications protocols (especially TCP/IP) Networking (especially in Ethernet, Fast Ethernet, FDDI and ATM) Networking operating systems (especially in Windows NT, Novell NetWare and UNIX) Communications programs (especially in serial communications, parallel communications and TCP/IP) Computer hardware (especially in PC hardware, serial communications and parallel communication) The book thus splits into 15 different areas, these are: General data compression (Chapters 2 and 3) Video, images and sound (Chapters 4-11 ) Error coding and encryption (Chapters 12-17) TCP/IP, WWW, Internets and Intranets (Chapters 18-20 and 23) Electronic Mail (Chapter 21 ) HTML (Chapters 25 and 26) Java (Chapters 27-29) Communication Programs (Chapters 20, 29 and 49) Network Operating Systems (Chapters 31-34) LANs/WANs (Chapters 35, 38-46) Serial Communications (Chapters 47 and 48) Parallel Communications (Chapters 50-52) Local Communications (Chapters 53-57) Routing and Protocols (Chapters 36 and 37) Cables and connectors (Chapters 58--60) Many handbooks and reference guides on the market contain endless tables and mathematics, or are dry to read and contain very little insight in their subject area. I have tried to make this book readable, but also contain key information which can be used by professionals.

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).

Programming the Microsoft Windows Driver Model

Writing UNIX Device Drivers

Windows NT Device Driver Development

Windows NT File System Internals

With C and GNU Development Tools

Pro Windows Embedded Compact 7

"Windows NT File System Internals" examines the NT/IO Manager, the Cache Manager, and the Memory Manager from the perspective of a software developer writing a file system driver or implementing a kernel-mode filter driver. The book provides numerous code examples, as well as the source for a complete, usable filter driver.

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.

Pajari provides application programmers with definitive information on writing device drivers for the UNIX operating system. The comprehensive coverage includes the four major categories of UNIX device drivers: character, block, terminal, and stream drivers. (Operating Systems)

"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 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.

Windows Internals

Windows System Programming

The Windows 2000 Device Driver Book

Developing Drivers with the Microsoft Windows Driver Foundation

x86, x64, ARM, Windows Kernel, Reversing Tools, and Obfuscation

Programming Embedded Systems

“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!

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:

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- 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

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.

The free book "Fundamentals of Computer Programming with C#" is a comprehensive computer programming tutorial that teaches programming, logical thinking, data structures and algorithms, problem solving and high quality code with lots of examples in C#. It starts with the first steps in programming and software development like variables, data types, conditional statements, loops and arrays and continues with other basic topics like methods, numeral systems, strings and string processing, exceptions, classes and objects. After the basics this fundamental programming book enters into more advanced programming topics like recursion, data structures (lists, trees, hash-tables and graphs), high-quality code, unit testing and refactoring, object-oriented principles (inheritance, abstraction, encapsulation and polymorphism) and their implementation the C# language. It also covers fundamental topics that each good developer should know like algorithm design, complexity of algorithms and problem solving. The book uses C# language and Visual Studio to illustrate the programming concepts and explains some C# / .NET specific technologies like lambda expressions, extension methods and LINQ. The book is written by a team of developers lead by Svetlin Nakov who has 20+ years practical software development experience. It teaches the major programming concepts and way of thinking needed to become a good software engineer and the C# language in the meantime. It is a great start for anyone who wants to become a skillful software engineer. The books does not teach technologies like databases, mobile and web development, but shows the true way to master the basics of programming regardless of the languages, technologies and tools. It is good for beginners and intermediate developers who want to put a solid base for a successful career in the software engineering industry. The book is accompanied by free video lessons, presentation slides and mind maps, as well as hundreds of exercises and live examples. Download the free C# programming book, videos, presentations and other resources from <http://introprogramming.info>. Title: Fundamentals of Computer Programming with C# (The Bulgarian C# Programming Book) ISBN: 9789544007737 ISBN-13:

978-954-400-773-7 (9789544007737) ISBN-10: 954-400-773-3 (9544007733) Author: Svetlin Nakov & Co. Pages: 1132 Language: English Published: Sofia, 2013 Publisher: Faber Publishing, Bulgaria Web site: <http://www.introprogramming.info> License: CC-Attribution-Share-Alike Tags: free, programming, book, computer programming, programming fundamentals, ebook, book programming, C#, CSharp, C# book, tutorial, C# tutorial; programming concepts, programming fundamentals, compiler, Visual Studio, .NET, .NET Framework, data types, variables, expressions, statements, console, conditional statements, control-flow logic, loops, arrays, numeral systems, methods, strings, text processing, StringBuilder, exceptions, exception handling, stack trace, streams, files, text files, linear data structures, list, linked list, stack, queue, tree, balanced tree, graph, depth-first search, DFS, breadth-first search, BFS, dictionaries, hash tables, associative arrays, sets, algorithms, sorting algorithm, searching algorithms, recursion, combinatorial algorithms, algorithm complexity, OOP, object-oriented programming, classes, objects, constructors, fields, properties, static members, abstraction, interfaces, encapsulation, inheritance, virtual methods, polymorphism, cohesion, coupling, enumerations, generics, namespaces, UML, design patterns, extension methods, anonymous types, lambda expressions, LINQ, code quality, high-quality code, high-quality classes, high-quality methods, code formatting, self-documenting code, code refactoring, problem solving, problem solving methodology, 9789544007737, 9544007733

Essential COM

Windows Kernel Programming

System architecture, processes, threads, memory management, and more

Windows 7 Device Driver

Rootkits

Escape and Evasion in the Dark Corners of the System

"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

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 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.

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).

A Developer's Guide

Writing Windows VxDs and Device Drivers

Handbook of Data Communications and Networks

Practical Reverse Engineering

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**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

A guide to rootkits describes what they are, how they work, how to build them, and how to detect them. 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

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>.

A Programmer's Handbook

Linux Device Drivers

Linux Device Driver Development Cookbook

The Rootkit Arsenal

Developing Drivers with the Windows Driver Foundation

Win32 Programming

**Writing Windows WDM Device Drivers** CRC Press

***The definitive guide—fully updated for Windows 10 and Windows Server 2016 Delve inside Windows architecture and internals, and see how core components work behind the scenes. Led by a team of internals experts, this classic guide has been fully updated for Windows 10 and Windows Server 2016. Whether you are a developer or an IT professional, you'll 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. This book will help you:*** · Understand the Window system architecture and its most important entities, such

*as processes and threads · Examine how processes manage resources and threads scheduled for execution inside processes · Observe how Windows manages virtual and physical memory · Dig into the Windows I/O system and see how device drivers work and integrate with the rest of the system · Go inside the Windows security model to see how it manages access, auditing, and authorization, and learn about the new mechanisms in Windows 10 and Server 2016 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.*

*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.*

*Linux Device Drivers Development*

*Linux Kernel Programming*

*Old New Thing*

*Windows Internals, Part 2*

*Fundamentals of Computer Programming with C#*

*Develop custom drivers for your embedded Linux applications*

*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.*

Master the art of developing customized device drivers for your embedded Linux systems Key FeaturesStay up to date with the Linux PCI, ASoC, and V4L2 subsystems and write device drivers for themGet to grips with the Linux kernel power management infrastructureAdopt a practical approach to customizing your Linux environment using best practicesBook 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 learnExplore and adopt Linux kernel helpers for locking, work deferral, and interrupt managementUnderstand the Regmap subsystem to manage memory accesses and work with the IRQ subsystemGet to grips with the PCI subsystem and write reliable drivers for PCI devicesWrite full multimedia device drivers using ALSA SoC and the V4L2 frameworkBuild power-aware device drivers using the kernel power management frameworkFind out how to get the most out of miscellaneous kernel subsystems such as NVMEM and WatchdogWho 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.

Drill down into Windows architecture and internals, discover how core Windows components work behind the scenes, and master information you can continually apply to improve architecture, development, system administration, and support. Led by three renowned Windows internals experts, this classic guide is now fully updated for Windows 10 and 8.x. As always, it combines unparalleled insider perspectives on how Windows behaves "under the hood" with hands-on

experiments that let you experience these hidden behaviors firsthand. Part 2 examines these and other key Windows 10 OS components and capabilities: Startup and shutdown The Windows Registry Windows management mechanisms WMI System mechanisms ALPC ETW Cache Manager Windows file systems The hypervisor and virtualization UWP Activation Revised throughout, this edition also contains three entirely new chapters: Virtualization technologies Management diagnostics and tracing Caching and file system support

Learn how to write high-quality kernel module code, solve common Linux kernel programming issues, and understand the fundamentals of Linux kernel internals Key FeaturesDiscover how to write kernel code using the Loadable Kernel Module frameworkExplore industry-grade techniques to perform efficient memory allocation and data synchronization within the kernelUnderstand the essentials of key internals topics such as kernel architecture, memory management, CPU scheduling, and kernel synchronizationBook 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. You'll start the journey by learning how to build the kernel from the source. Next, you'll write your first kernel module using the powerful Loadable Kernel Module (LKM) framework. The following chapters will cover key kernel internals topics including Linux kernel architecture, memory management, and CPU scheduling. During the course of this book, 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 learnWrite high-quality modular kernel code (LKM framework) for 5.x kernelsConfigure and build a kernel from sourceExplore the Linux kernel architectureGet to grips with key internals regarding memory management within the kernelUnderstand and work with various dynamic kernel memory alloc/dealloc APIsDiscover key internals aspects regarding CPU scheduling within

**the kernel**Gain an understanding of kernel concurrency issuesFind out how to work with key kernel synchronization primitivesWho this book is for This book is for Linux programmers beginning to find their way with Linux kernel development. If you're a Linux kernel and driver developer looking to overcome frequent and common kernel development issues, or understand kernel intervals, you'll find plenty of useful information. You'll need a solid foundation of Linux CLI and C programming before you can jump in.

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

**Mastering Linux Device Driver Development**

**Practical Development Throughout the Evolution of Windows, The**

**The Bulgarian C# Book**

**Windows Internals, Part 1**

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. ;

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.