Windows Internals Part 2 Developer Reference

The First In-Depth, Real-World, Insider's Guide to Powerful Windows Debugging For Windows developers, few tasks are more challenging than debugging–-or more crucial. Reliable and realistic information about Windows debugging has always been scarce. Now, with over 15 years of experience two of Microsoft's system-level developers present a thorough and practical guide to Windows debugging ever written. Mario Hewardt and Daniel Pravat cover debugging throughout the entire application lifecycle and show how to make the most of the tools currently available–-including Microsoft's powerful native debuggers and third-party solutions. To help you find real solutions fast, this book is organized around real-world debugging scenarios. Hewardt and Pravat use detailed code examples to illuminate the complex debugging challenges professional developers actually face. From core Windows operating system concepts to security, Windows® Vista™ and 64-bit debugging, they address emerging topics head-on–and nothing is ever oversimplified or glossed over!

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

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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

It's two years after the Zero Day attacks, and cyber-security analyst Jeff Aiken is reaping the rewards for crippling Al-Qaida's assault on the computer infrastructure of the Western world. His company is flourishing, and his relationship with former government agent Daryl Haugen has intensified since she became a part of his team. But the West is under its greatest threat yet. A revolutionary, invisible trojan that alters data without leaving a trace---more sophisticated than any virus seen before---has been identified, roiling international politics. Jeff and Daryl are summoned to root it out and discover its source. As the trojan penetrates Western intelligence, and the terrifying truth about its creator is revealed, Jeff and Daryl find themselves in a desperate race to reverse it as the fate of both East and West hangs in the balance. A thrilling suspense story and a sober warning from one of the world's leading experts on cyber-security, Trojan Horse exposes the already widespread use of international cyber-espionage as a powerful and dangerous weapon, and the lengths to which one man will go to stop it.

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.

Master cutting-edge techniques and countermeasures to protect your organization from live hackers. Learn how to harness cyber deception in your operations to gain an edge over the competition. Key Features Gain an advantage against live hackers in a competition or real computing environment Understand advanced red team and blue team techniques with code examples Learn to battle in short-term memory, whether remaining unseen (red teams) or monitoring an attacker's traffic (blue teams) Book Description Little has been written about what to do when live hackers are on your system and running amok. Even experienced hackers tend to choke up when they realize the network defender has caught them and is zoning in on their implants in real time.

This book will provide tips and tricks all along the kill chain of an attack, showing where hackers can have the upper hand in a live conflict and how defenders can outsmart them in this adversarial game of computer cat and mouse. This book contains two subsections in each chapter, specifically focusing on the offensive and defensive teams. It begins by introducing you to adversarial operations and principles of computer conflict where you will explore the core principles of deception, humanity, economy, and more about human-on-human conflicts. Additionally, you will understand everything from planning to setting up infrastructure and tooling that both sides should have in place. Throughout this book, you will learn how to gain an advantage over opponents by disappearing from what they can detect. You will further understand how to blend in, uncover other actors' motivations and means, and learn to tamper with them to hinder their ability to detect your presence. Finally, you will learn how to gain an advantage through advanced research and thoughtfully concluding an operation. By the end of this book, you will have achieved a solid understanding of cyberattacks from both an attacker's and a defender's perspective. What you will learn Understand how to implement process injection and how to detect it Turn the tables on the offense with active defense Disappear on the defender's system, by tampering with defensive sensors Upskill in using deception with your backdoors and countermeasures including honeypots Kick someone else from a computer you are on and gain the upper hand Adopt a language agnostic approach to become familiar with techniques that can be applied to both the red and blue teams Prepare yourself for real-time cybersecurity conflict by using some of the best techniques currently in the industry Who this book is for Pentesters to red teamers, security operations center analysts to incident responders, attackers, defenders, general hackers, advanced computer users, and security engineers should gain a lot from this book. This book will also be beneficial to those getting into purple teaming or adversarial simulations, as it includes processes for gaining an advantage over the other team. Basic knowledge of Python programming, Go programming, Bash, PowerShell, and systems administration is desirable. Furthermore, knowledge of incident response and Linux is beneficial. Prior exposure to cybersecurity, penetration testing, and ethical hacking basics is desirable.

Rapidly implement Internet of Things solutions Creating programs for the Internet of Things offers you an opportunity to build and program custom devices whose functionality is limited only by your imagination. This book teaches you to do exactly that, with solutions presented in a step-by-step format. When you read this book, you not only learn the fundamentals of device programming, you will also be ready to write code for revolutionizing devices and robots. You don’t need to be an expert in low-level programming to benefit from this book. It explains basic concepts and programming techniques before diving into the more complicated topics. Each of the book’s chapters and appendices contains a suitable level of detail to help you quickly master device programming. MCP Dawid Borycki shows you how to: Build Universal Windows Platform (UWP) applications that target interconnected embedded devices Design and implement background apps for seamless integration with hardware components Use intrinsic UWP functionality to detect and track human faces Build artificial auditory, visual, and learning systems Process audio signals to blink LEDs to the rhythm of music Use OpenCV to develop custom image-processing algorithms Communicate with external devices by using serial, USB, Wi-Fi, and AllJoyn connectivity Design and implement applications to control DC,

stepper, and servo motors for robotics Use Microsoft Cognitive Services to detect human emotions Build predictive analysis and preventive maintenance systems by using the Azure IoT Suite

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

"I enjoyed reading this useful overview of the techniques and challenges of implementing linkers and loaders. While most of the examples are focused on three computer architectures that are widely used today, there are also many side comments about interesting and quirky computer architectures of the past. I can tell from these war stories that the author really has been there himself and survived to tell the tale." -Guy Steele Whatever your programming language, whatever your platform, you probably tap into linker and loader functions all the time. But do you know how to use them to their greatest possible advantage? Only now, with the publication of Linkers & Loaders, is there an authoritative book devoted entirely to these deep-seated compile-time and run-time processes. The book begins with a detailed and comparative account of linking and loading that illustrates the differences among various compilers and operating systems. On top of this foundation, the author presents clear practical advice to help you create faster, cleaner code. You'll learn to avoid the pitfalls associated with Windows DLLs, take advantage of the space-saving, performance-improving techniques supported by many modern linkers, make the best use of the UNIX ELF library scheme, and much more. If you're serious about programming, you'll devour this unique guide to one of the field's least understood topics. Linkers & Loaders is also an ideal supplementary text for compiler and operating systems courses. Features: * Includes a linker construction project written in Perl, with project files available for download. * Covers dynamic linking in Windows, UNIX, Linux, BeOS, and other operating systems. * Explains the Java linking model and how it figures in network applets and extensible Java code. * Helps you write more elegant and effective code, and build applications that compile, load, and run more efficiently.

Optimize Windows system reliability and performance with Sysinternals IT pros and power users consider the free

Windows Sysinternals tools indispensable for diagnosing, troubleshooting, and deeply understanding the Windows platform. In this extensively updated guide, Sysinternals creator Mark Russinovich and Windows expert Aaron Margosis help you use these powerful tools to optimize any Windows system's reliability, efficiency, performance, and security. The authors first explain Sysinternals' capabilities and help you get started fast. Next, they offer in-depth coverage of each major tool, from Process Explorer and Process Monitor to Sysinternals' security and file utilities. Then, building on this knowledge, they show the tools being used to solve real-world cases involving error messages, hangs, sluggishness, malware infections, and much more. Windows Sysinternals creator Mark Russinovich and Aaron Margosis show you how to: Use Process Explorer to display detailed process and system information Use Process Monitor to capture low-level system events, and quickly filter the output to narrow down root causes List, categorize, and manage software that starts when you start or sign in to your computer, or when you run Microsoft Office or Internet Explorer Verify digital signatures of files, of running programs, and of the modules loaded in those programs Use Autoruns, Process Explorer, Sigcheck, and Process Monitor features that can identify and clean malware infestations Inspect permissions on files, keys, services, shares, and other objects Use Sysmon to monitor security-relevant events across your network Generate memory dumps when a process meets specified criteria Execute processes remotely, and close files that were opened remotely Manage Active Directory objects and trace LDAP API calls Capture detailed data about processors, memory, and clocks Troubleshoot unbootable devices, file-in-use errors, unexplained communication, and many other problems Understand Windows core concepts that aren't well-documented elsewhere

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

Michael Lewis' Flash Boys revealed how high-frequency trading has created a ruthless breed of traders capable of winning whichever way the market turns. In Rogue Code, Mark Russinovich takes it one step further to show how their

grip on high finance makes the stock market vulnerable to hackers who could bring about worldwide financial collapse. Cyber security expert Jeff Aiken knows that no computer system is completely secure. When he's called to investigate a possible breach at the New York Stock Exchange, he discovers not only that their system has been infiltrated but that someone on the inside knows. Yet for some reason, they have allowed the hackers to steal millions of dollars from accounts without trying to stop the theft. When Jeff uncovers the crime, the NYSE suddenly turns on him. Accused of grand larceny, he must find and expose the criminals behind the theft, not just to prove his innocence but to stop a multibillion-dollar heist that could upend the U.S. economy. Unwilling to heed Jeff's warnings, the NYSE plans to continue with a major IPO using a new, untested system, one that might be susceptible both to hackers and to ruthless high-frequency traders willing to take any risk to turn a profit. Now Jeff Aiken must unearth the truth on his own, following the thread to the back alleys of Rio de Janeiro to take on one of the world's most ruthless cartels. Praised for his combination of real-world technology and quick-paced action, with Rogue Code Mark Russinovich delivers an intense thriller about a cyber threat that seems all too possible---and the Wall Street traders who might allow it to happen. Includes a foreword by Haim Bodek, author of The Problem of HFT: Collected Writings on High Frequency Trading & Stock Market Structure Reform.

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. ;

This is a book for curious people. It attempts to answer the basic question “how does it work?” As such, it does not explain how to call documented APIs and DDIs to accomplish some specific goal. There is plenty of information available on these subjects, including the MSDN Library, the WDK documentation and several excellent books. Rather, its purpose is to analyze how the Virtual Memory Manager works, simply because it is something worth knowing. With a certain mindset, it might even be something fun to know.Even though this book gives a fairly detailed description of the Virtual Memory Manager, it is not reserved for experienced kernel level programmers. Parts I and II provide information on the x64 processor and enough details on kernel mode code execution to help readers approaching these subjects for the first time.This book describes the Windows 7 x64 implementation of the Virtual Memory Manager. All of the analysis and experiments have been performed on this particular version only.

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

Want to perform programming tasks better, faster, simpler, and make them repeatable? Take a deep dive into Windows

PowerShell and discover what this distributed automation platform can do. Whether you're a .NET developer or IT pro, this concise guide will show you how PowerShell's scripting language can help you be more productive on everyday tasks. Quickly learn how to create PowerShell scripts and embed them into your existing applications, write "little languages" to solve specific problems, and take charge of your code. This book includes example scripts that you can easily pull apart, tweak, and then use in your own PowerShell and .NET solutions. Slice and dice text, XML, CSV, and JSON with ease Embed PowerShell to provide scripting capabilities for your C# apps Create GUI applications five to ten times faster with less code Leverage PowerShell's capabilities to work with the Internet Interact with DLLs and create objects, automatically display properties, and call methods in live interactive sessions Build domain-specific languages (DSLs) and vocabularies to express solutions more clearly Work with Microsoft Office via the Component Object Model (COM) Discover PowerShell v3 features included with Windows 8 and Windows Server 2012

A guide to computer security for software developers demonstrates techniques for writing secure applications, covering cryptography, authentication, access control, and credentials.

Conquer Windows Server 2019—from the inside out! Dive into Windows Server 2019—and really put your Windows Serverexpertise to work. Focusing on Windows Server 2019's most powerful and innovative features, this supremely organized reference packs hundreds of timesaving solutions, tips, and workarounds—all you need to plan, implement, or manage Windows Server in enterprise, data center, cloud, and hybrid environments. Fully reflecting new innovations for security, hybrid cloud environments, and Hyper-Converged Infrastructure (HCI), it covers everything from cluster sets to Windows Subsystem for Linux. You'll discover how experts tackle today's essential tasks—and challenge yourself to new levels of mastery. • Optimize the full Windows Server 2019 lifecycle, from planning and configuration through rollout and administration • Leverage new configuration options including App Compatibility Features on Demand (FOD) or Desktop Experience • Ensure fast, reliable upgrades and migrations • Manage Windows servers, clients, and services through Windows Admin Center • Seamlessly deliver and administer core DNS, DHCP, fi le, print, storage, and Internet services • Use the Storage Migration Service to simplify storage moves and configuration at the destination • Seamlessly integrate Azure IaaS and hybrid services with Windows Server 2019 • Improve agility with advanced container technologies, including container networking and integration into Kubernetes orchestration clusters • Deliver Active Directory identity, certifi cate, federation, and rights management services • Protect servers, clients, VMs, assets, and users with advanced Windows Server 2019 security features, from Just Enough Administration to shielded VMs and guarded virtualization fabrics • Monitor performance, manage event logs, confi gure advanced auditing, and perform backup/recovery Windows Server 2019 For Experienced Windows Server Users and IT Professionals • Your role:

Experienced intermediate to-advanced level Windows Server user or IT professional • Prerequisites: Basic understanding of Windows Server procedures, techniques, and navigation

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

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.

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

An airliner's controls abruptly fail mid-flight over the Atlantic. An oil tanker runs aground in Japan when its navigational system suddenly stops dead. Hospitals everywhere have to abandon their computer databases when patients die after being administered incorrect dosages of their medicine. In the Midwest, a nuclear power plant nearly becomes the next Chernobyl when its cooling systems malfunction. At first, these random computer failures seem like unrelated events. But Jeff Aiken, a former government analyst who quit in disgust after witnessing the gross errors that led up to 9/11, thinks otherwise. Jeff fears a more serious attack targeting the United States computer infrastructure is already under way. And as other menacing computer malfunctions pop up around the world, some with deadly results, he realizes that there isn't much time if he hopes to prevent an international catastrophe. Written by a global authority on cyber security, Zero Day presents a chilling "what if" scenario that, in a world completely reliant on technology, is more than possible today---it's a cataclysmic disaster just waiting to happen.

An in-depth look into Mac OS X and iOS kernels Powering Macs, iPhones, iPads and more, OS X and iOS are becoming ubiquitous. When it comes to documentation, however, much of them are shrouded in mystery. Cocoa and Carbon, the application frameworks, are neatly described, but system programmers find the rest lacking. This indispensable guide illuminates the darkest corners of those systems, starting with an architectural overview, then drilling all the way to the core. Provides you with a top down view of OS X and iOS Walks you through the phases of system startup—both Mac (EFi) and mobile (iBoot) Explains how processes, threads, virtual memory, and filesystems are maintained Covers the security architecture Reviews the internal Apis used by the system—BSD and Mach Dissects the kernel, XNU, into its sub components: Mach, the BSD Layer, and I/o kit, and explains each in detail Explains the inner workings of device drivers From architecture to implementation, this book is essential reading if you want to get serious about the internal workings of Mac OS X and iOS.

For a one-semester undergraduate course in operating systems for computer science, computer engineering, and electrical engineering majors. Winner of the 2009 Textbook Excellence Award from the Text and Academic Authors Association (TAA)! Operating Systems: Internals and Design Principles is a comprehensive and unified introduction to operating systems. By using several innovative tools, Stallings makes it possible to understand critical core concepts that

can be fundamentally challenging. The new edition includes the implementation of web based animations to aid visual learners. At key points in the book, students are directed to view an animation and then are provided with assignments to alter the animation input and analyze the results. The concepts are then enhanced and supported by end-of-chapter case studies of UNIX, Linux and Windows Vista. These provide students with a solid understanding of the key mechanisms of modern operating systems and the types of design tradeoffs and decisions involved in OS design. Because they are embedded into the text as end of chapter material, students are able to apply them right at the point of discussion. This approach is equally useful as a basic reference and as an up-to-date survey of the state of the art.

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.

Achieve Linux system administration mastery with time-tested and proven techniques In Mastering Linux System Administration, Linux experts and system administrators Christine Bresnahan and Richard Blum deliver a comprehensive roadmap to go from Linux beginner to expert Linux system administrator with a learning-by-doing approach. Organized by do-it-yourself tasks, the book includes instructor materials like a sample syllabus, additional review questions, and

slide decks. Amongst the practical applications of the Linux operating system included within, you'll find detailed and easy-to-follow instruction on: Installing Linux servers, understanding the boot and initialization processes, managing hardware, and working with networks Accessing the Linux command line, working with the virtual directory structure, and creating shell scripts to automate administrative tasks Managing Linux user accounts, system security, web and database servers, and virtualization environments Perfect for entry-level Linux system administrators, as well as system administrators familiar with Windows, Mac, NetWare, or other UNIX systems, Mastering Linux System Administration is a must-read guide to manage and secure Linux servers.

You're beyond the basics, so dive right into troubleshooting Windows 7 -- and really put your PC to work! This supremely organized reference describes hundreds of prevention tips, troubleshooting techniques, and recovery tools in one essential guide. It's all muscle and no fluff. Discover how the experts keep their Windows 7-based systems running smoothly -- and challenge yourself to new levels of mastery. Take control of essential Windows 7 maintenance and security features, such as the Action Center and User Account Control Master quick fixes to the most common problems using expert tips and step-by-step repair guides Implement best practices to help prevent and combat viruses, malware, and identity theft Apply advanced troubleshooting techniques by understanding how Windows 7 works Diagnose hardware problems and work safely with your PC Develop a recovery plan to restore your system and data in the event of a disaster Know when to use power utilities for advanced performance, maintenance, and diagnostics Your book -- online! Get your fully searchable online edition -- with unlimited access on the Web.

Get in-depth guidance—and inside insights—for using the Windows Sysinternals tools available from Microsoft TechNet. Guided by Sysinternals creator Mark Russinovich and Windows expert Aaron Margosis, you'll drill into the features and functions of dozens of free file, disk, process, security, and Windows management tools. And you'll learn how to apply the book's best practices to help resolve your own technical issues the way the experts do. Diagnose. Troubleshoot. Optimize. Analyze CPU spikes, memory leaks, and other system problems Get a comprehensive view of file, disk, registry, process/thread, and network activity Diagnose and troubleshoot issues with Active Directory Easily scan, disable, and remove autostart applications and components Monitor application debug output Generate trigger-based memory dumps for application troubleshooting Audit and analyze file digital signatures, permissions, and other security information Execute Sysinternals management tools on one or more remote computers Master Process Explorer, Process Monitor, and Autoruns

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 1, you will: Understand how core system and management mechanisms work—including the object manager, synchronization, Wow64, Hyper-V, and the registry Examine the data structures and activities behind processes, threads, and jobs Go inside the Windows security model to see how it manages access, auditing, and authorization Explore the Windows networking stack from top to bottom—including APIs, BranchCache, protocol and NDIS drivers, and layered services Dig into internals hands-on using the kernel debugger, performance monitor, and other tools

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

Master the intricacies of application development with unmanaged C++ code—straight from the experts. Jeffrey Richter's classic book is now fully revised for Windows XP, Windows Vista, and Windows Server 2008. You get in-depth, comprehensive guidance, advanced techniques, and extensive code samples to help you program Windows–based applications. Discover how to: Architect and implement your applications for both 32-bit and 64-bit Windows Create and manipulate processes and jobs Schedule, manage, synchronize and destroy threads Perform asynchronous and synchronous device I/O operations with the I/O completion port Allocate memory using various techniques including virtual memory, memory-mapped files, and heaps Manipulate the default committed physical storage of thread stacks Build DLLs for delay-loading, API hooking, and process injection Using structured exception handling, Windows Error Recovery, and Application Restart services

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.

A guide to the architecture and internal structure of Microsoft Windows 7 and Microsoft Windows server 2008 R2.

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.

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 a richly detailed technical overview of

the design goals and architecture of Windows NT. (Operating Systems)

Delve into programming the Windows operating system through the Windows API in with C++. Use the power of the Windows API to working with processes, threads, jobs, memory, I/O and more. The book covers current Windows 10 versions, allowing you to get the most of what Windows has to offer to developers in terms of productivity, performance and scalability.

Extend your C# skills to F#—and create data-rich computational and parallel software components faster and more efficiently. Focusing on F# 3.0 and Microsoft Visual Studio 2012, you'll learn how to exploit F# features to solve both computationally-complex problems as well as everyday programming tasks. Topics include: C# and F# data structures; F# for functional, object-oriented, and imperative programming; design patterns; type providers; and portable support for Windows 8. You'll examine real-world applications, including Windows 8-style HTML5 and JavaScript apps, along with cloud and service apps. You'll write your own type provider. And you'll see how to expand F# computation power to high-performance GPU computing.