

## Windows Internals 7th Edition

### Windows Internals User Mode

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.

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

Discover high-value Azure security insights, tips, and operational optimizations This book presents comprehensive Azure Security Center techniques for safeguarding cloud and hybrid environments. Leading Microsoft security and cloud experts Yuri Diogenes and Dr. Thomas Shinder show how to apply Azure Security Center's full spectrum of features and capabilities to address protection, detection, and response in key operational scenarios. You'll learn how to secure any Azure workload, and optimize virtually all facets of modern security, from policies and identity to incident response and risk management. Whatever your role in Azure security, you'll learn how to save hours, days, or even weeks by solving problems in most efficient, reliable ways possible. Two of Microsoft's leading cloud security experts show how to:

- Assess the impact of cloud and hybrid environments on security, compliance, operations, data protection, and risk management
- Master a new security paradigm for a world without traditional perimeters
- Gain visibility and control to secure compute, network, storage, and application workloads
- Incorporate Azure Security Center into your security operations center
- Integrate Azure Security Center with Azure AD Identity Protection Center and third-party solutions
- Adapt Azure Security Center's built-in policies and definitions for your organization
- Perform security assessments and implement Azure Security Center recommendations
- Use incident response features to detect, investigate, and

address threats • Create high-fidelity fusion alerts to focus attention on your most urgent security issues • Implement application whitelisting and just-in-time VM access • Monitor user behavior and access, and investigate compromised or misused credentials • Customize and perform operating system security baseline assessments • Leverage integrated threat intelligence to identify known bad actors  
A guide to the architecture and internal structure of Microsoft Windows 7 and Microsoft Windows server 2008 R2.

Conquer Windows Server 2019—from the inside out! Dive into Windows Server 2019—and really put your Windows Server expertise 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, file, 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, certificate, 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, configure 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

Chamine exposes how your mind is sabotaging you and keeping you from achieving your true potential. He shows you how to take concrete steps to unleash the vast, untapped powers of your mind.

The Microsoft Technology Associate certification (MTA) curriculum helps instructors teach and validate fundamental technology concepts with a foundation for students' careers as well as the confidence they need to succeed in advanced studies. Through the use of MOAC MTA titles you can help ensure your students future success in and out of the classroom. This MTA text covers the following Windows Operating System vital fundamental skills: • Understanding Operating System Configurations • Installing and Upgrading Client Systems • Managing Applications, Managing Files and Folders • Managing Devices • Understanding Operating System Maintenance. Click here to learn more about Microsoft Technology Associate, (MTA) a new and innovative certification track designed to provide a pathway for future success in technology courses and careers.

Get a head start evaluating Windows 10—with technical insights from award-winning journalist and Windows expert Ed Bott. This guide introduces new features and capabilities, providing a practical, high-level overview for IT professionals ready to begin deployment planning now. This edition was written after the release of Windows 10 version 1511 in November 2015 and includes all of its enterprise-focused features. The goal of this book is to help you sort out what's

new in Windows 10, with a special emphasis on features that are different from the Windows versions you and your organization are using today, starting with an overview of the operating system, describing the many changes to the user experience, and diving deep into deployment and management tools where it's necessary.

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

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

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

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*.

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

Most Windows (tm) programming books treat Windows like a "black box"-your program makes calls to the Windows API and somewhere the request is processed. But to write truly professional programs, you need to understand what goes on under the hood of Windows. Matt Pietrek, coauthor of the bestselling Undocumented Windows, reveals the internal complexity and power of Windows in a clear and concise style. Through the extensive use of pseudocode, the book illustrates the actual implementation of Windows functions, showing in detail what happens when a Windows program executes. The topics include a walk through a typical Windows application, memory management, the creation and destruction of a program, dynamic linking, the Windows-DOS interface, the scheduler, the messaging system, resource management, and GDI basics. Based on intensive research of the actual binary code of the Windows program files, Windows Internals' authoritative account of the complicated interactions that occur inside Windows is essential reading for all Windows programmers. 0201622173B04062001

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.



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.

With the growing prevalence of the Internet, rootkit technology has taken center stage in the battle between White Hats and Black Hats. Adopting an approach that favors full disclosure, The Rootkit Arsenal presents the most accessible, timely, and complete coverage of rootkit technology. 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.

Get a head start deploying Windows 10--with tips and best practices from experts in the field. This guide shows you how to deploy Windows 10 in an automated way without impacting end users by leveraging System Center Configuration Manager, which is the most used product to deploy Microsoft operating systems in the industry today.

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

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

"Scribus: the official manual' is the most comprehensive source of information regarding Scribus, the premier open source desktop publishing (DTP) software program." ; "... [also] contains important information about DTP concepts, fonts and typography, color management, the PDF file format, and many other important topics integral to commercial layout and printing."--Back cover.

A complete, detailed Windows 10 reference for beginners and power users alike Windows 10 Bible is one of the most thorough references on the market with complete coverage of Windows 10. Whether you're a beginner seeking guidance or a power-user looking for fresh tips and tricks, this book contains everything you could ever hope to know about the Windows operating system. You will get the insider guidance of a Microsoft support manager as you discover everything there is to know about Windows customization, content management, networking, hardware, performance, security, and more. Step-by-step instructions walk you through new and important procedures, and screen shots help you stay on track every step of the way. Whether you're starting from scratch or just looking to become more proficient, this guide is your ideal solution. You'll learn just what Windows can do, and how to take full advantage so you can get more done faster. Go beyond the desktop to personalize the system Manage your content, media, software, and security Eliminate issues related to printing, faxing, and scanning Fine-tune performance, connect to a network, work with the cloud, and more Whether you want a complete basic introduction or the nitty-gritty detail, Windows 10 Bible has you covered.

From Newbery Medal honoree and #1 New York Times bestselling author Jason Reynolds comes a hilarious, hopeful, and action-packed middle grade novel about the greatest young superhero you've never heard of, filled with illustrations by Raúl the Third! Portico Reeves's superpower is making sure all the other superheroes—like his parents and two best friends—stay super. And safe. Super safe. And he does this all in secret. No one in his civilian life knows he's actually...Stuntboy! But his regular Portico identity is pretty cool, too. He lives in the biggest house on the block, maybe in the whole city, which basically makes it a castle. His mom calls where they live an apartment building. But a building with fifty doors just in the hallways is definitely a castle. And behind those fifty doors live a bunch of different people who Stuntboy saves all the time. In fact, he's the only reason the cat, New Name Every Day, has nine lives. All this is swell except for Portico's other secret, his not-so-super secret. His parents are fighting all the time. They're trying to hide it by repeatedly telling Portico to go check on a neighbor "in the meantime." But Portico knows "meantime" means his parents are heading into the Mean Time which means they're about to get into it, and well, Portico's superhero responsibility is to save them, too—as soon as he figures out how. Only, all these secrets give Portico the worry wiggles, the frets, which his mom calls anxiety. Plus, like all superheroes, Portico has an arch-nemesis who is determined to prove that there is nothing super about Portico at all.

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 Windows 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.

The quick way to learn Windows 10 This is learning made easy. Get more done quickly with Windows 10. Jump in wherever you need answers—brisk lessons and colorful screenshots show you exactly what to do, step by step. Discover fun and functional Windows 10 features! Work with the new, improved Start menu and Start screen Learn about different sign-in methods Put the Cortana personal assistant to work for you Manage your online reading list and annotate articles with the new browser, Microsoft Edge Help safeguard your computer, your information, and your privacy Manage connections to networks, devices, and storage resources

Conquer Windows Server 2016—from the inside out! Dive into Windows Server 2016—and really put your Windows Server expertise to work. Focusing on Windows Server 2016'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 Windows Server new capabilities for the cloud-first era, Orin covers everything from Nano Server to Windows Server and Hyper-V Containers. You'll discover how experts tackle today's essential tasks—and challenge yourself to new levels of mastery.

- Optimize the full Windows Server 2016 lifecycle, from planning and configuration through rollout and administration
- Ensure fast, reliable upgrades and migrations
- Seamlessly deliver core DNS, DHCP, file, print, storage, and Internet services
- Use IPAM to centrally manage all enterprise DNS and DHCP infrastructure
- Gain dramatic storage utilization improvements with built-in deduplication and storage replica
- Build flexible cloud and hybrid environments with Windows Containers and Shielded VMs
- Seamlessly integrate Azure IaaS services with Windows Server 2016
- Slash resource usage and improve availability with tiny Nano Server installations
- Improve configuration management with Desired State Configuration and Chef
- Deliver Active Directory identity, certificate, federation, and rights management services
- Protect servers, clients, assets, and users with advanced Windows Server 2016 security features including Just Enough Administration

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



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)

Malware analysis is big business, and attacks can cost a company dearly. When malware breaches your defenses, you need to act quickly to cure current infections and prevent future ones from occurring. For those who want to stay ahead of the latest malware, Practical Malware Analysis will teach you the tools and techniques used by professional analysts. With this book as your guide, you'll be able to safely analyze, debug, and disassemble any malicious software that comes your way. You'll learn how to: –Set up a safe virtual environment to analyze malware –Quickly extract network signatures and host-based indicators –Use key analysis tools like IDA Pro, OllyDbg, and WinDbg –Overcome malware tricks like obfuscation, anti-disassembly, anti-debugging, and anti-virtual machine techniques –Use your newfound knowledge of Windows internals for malware analysis –Develop a methodology for unpacking malware and get practical experience with five of the most popular packers –Analyze special cases of malware with shellcode, C++, and 64-bit code Hands-on labs throughout the book challenge you to practice and synthesize your skills as you dissect real malware samples, and pages of detailed dissections offer an over-the-shoulder look at how the pros do it. You'll learn how to crack open malware to see how it really works, determine what damage it has done, thoroughly clean your network, and ensure that the malware never comes back. Malware analysis is a cat-and-mouse game with rules that are constantly changing, so make sure you have the fundamentals. Whether you're tasked with securing one network or a thousand networks, or you're making a living as a malware analyst, you'll find what you need to succeed in Practical Malware Analysis.

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>.

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.

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

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.

Annotation Over the past 10 years, distributed systems have become more fine-grained. From the large multi-million line long monolithic applications, we are now seeing the benefits of smaller self-contained services. Rather than heavy-weight, hard to change Service Oriented Architectures, we are now seeing systems consisting of collaborating microservices. Easier to change, deploy, and if required retire, organizations which are in the right position to take advantage of them are yielding significant benefits. This book takes an holistic view of the things you need to be cognizant of in order to pull this off. It covers just enough understanding of technology, architecture, operations and organization to show you how to move towards finer-grained systems.

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.

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- 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

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

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