

Windows Internals Part 1 System Architecture Processes Threads Memory Management And More 7th Edition

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Understanding IPv6 - Joseph Davies 2012-06-15

Your essential guide to deploying IPv6 on Windows networks Get in-depth technical information to put IPv6 technology to work—including networks with hardware running Windows 8 and Windows Server 2012.

Written by a networking expert, this reference explains IPv6 features and benefits, and provides detailed information to help you implement this protocol. You'll learn best practices for using IPv6 services in your Windows network, whether you're an IT professional, a network administrator, or an IT student. Discover how to: Use Windows features and tools to implement IPv6 on your network Set up a test lab to experiment with IPv6 configuration and functionality Understand dynamic routing and the IPv6 routing protocols Use IPv6 transition technologies to support both IPv4 and IPv6 during deployment Implement IPv6 security features and measures Deploy native IPv6 connectivity to an IPv4-only intranet Apply best practices from the Microsoft corporate network case study Test your understanding of IPv6 concepts with end-of-chapter quizzes

What Makes It Page? - Enrico Martignetti 2012-08-21

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.

Inside Windows Debugging - Tarik Soulami 2012-05-15

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

Windows Internals - Mark E. Russinovich 2012-03-15

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

Zero Day - Mark Russinovich 2011-03-15

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.

Rootkits - Greg Hognlund 2006

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

Windows Internals, Part 1 - 2017

Inside Windows NT - Helen Custer 1993

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)

Windows Internals Seventh Edition Part 1 - Pavel Yosifovich 2017

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.

Troubleshooting with the Windows Sysinternals Tools - Mark E. Russinovich 2016-10-10

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

Windows PowerShell 2.0 Best Practices - Ed Wilson 2009-12-16

Apply best practices for automating system administration with Windows PowerShell 2.0 and optimize your operational efficiency and results. This guide captures the field-tested tips, real-world lessons, and candid advice of practitioners across the range of business and technical scenarios and across the scripting life cycle. Discover how to: Take advantage of new features and cmdlets in Windows PowerShell 2.0 Plan scripting usage scenarios and define standards Deploy Windows PowerShell 2.0 to desktops and servers Configure scripting environments Optimize remote scripting capabilities Work with Active Directory and WMI Design functions and modules Optimize input and output Handle errors Document scripts Test and troubleshoot scripts Avoid scripting pitfalls The companion CD includes a fully searchable eBook and sample scripts. For customers who purchase an ebook version of this title, instructions for downloading the CD files can be found in the ebook.

The Art of Memory Forensics - Michael Hale Ligh 2014-07-22

Memory forensics provides cutting edge technology to help investigate digital attacks Memory forensics is the art of analyzing computer memory (RAM) to solve digital crimes. As a follow-up to the best seller Malware Analyst's Cookbook, experts in the fields of malware, security, and digital forensics bring you a step-by-step guide to memory forensics—now the most sought after skill in the digital forensics and incident response fields. Beginning with introductory concepts and moving toward the advanced, The Art of Memory Forensics: Detecting Malware and Threats in Windows, Linux, and Mac Memory is based on a five day training course that the authors have presented to hundreds of students. It is the only book on the market

that focuses exclusively on memory forensics and how to deploy such techniques properly. Discover memory forensics techniques: How volatile memory analysis improves digital investigations Proper investigative steps for detecting stealth malware and advanced threats How to use free, open source tools for conducting thorough memory forensics Ways to acquire memory from suspect systems in a forensically sound manner The next era of malware and security breaches are more sophisticated and targeted, and the volatile memory of a computer is often overlooked or destroyed as part of the incident response process. The Art of Memory Forensics explains the latest technological innovations in digital forensics to help bridge this gap. It covers the most popular and recently released versions of Windows, Linux, and Mac, including both the 32 and 64-bit editions.

Windows PowerShell 3.0 First Steps - Ed Wilson 2013-07-15

Get started with this powerful Windows administration tool Automate Windows administration tasks with ease by learning the fundamentals of Windows PowerShell 3.0. Led by a Windows PowerShell expert, you'll learn must-know concepts and techniques through easy-to-follow explanations, examples, and exercises. Once you complete this practical introduction, you can go deeper into the Windows PowerShell command line interface and scripting language with Windows PowerShell 3.0 Step by Step. Discover how to: Create effective Windows PowerShell commands with one line of code Apply Windows PowerShell commands across several Windows platforms Identify missing hotfixes and service packs with a single command Sort, group, and filter data using the Windows PowerShell pipeline Create users, groups, and organizational units in Active Directory Add computers to a domain or workgroup with a single line of code Run Windows PowerShell commands on multiple remote computers Unleash the power of scripting with Windows Management Instrumentation (WMI)

Practical Malware Analysis - Michael Sikorski 2012-02-01

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.

Operating Systems - Thomas Anderson 2014

Over the past two decades, there has been a huge amount of innovation in both the principles and practice of operating systems Over the same period, the core ideas in a modern operating system - protection, concurrency, virtualization, resource allocation, and reliable storage - have become widely applied throughout computer science. Whether you get a job at Facebook, Google, Microsoft, or any other leading-edge technology company, it is impossible to build resilient, secure, and flexible computer systems without the ability to apply operating systems concepts in a variety of settings. This book examines the both the principles and practice of modern operating systems, taking important, high-level concepts all the way down to the level of working code. Because operating systems concepts are among the most difficult in computer science, this top to bottom approach is the only way to really understand and master this important material.

Inside Windows NT - David A. Solomon 1998

IBM Power Systems Performance Guide: Implementing and Optimizing - Dino Quintero 2013-05-01
This IBM® Redbooks® publication addresses performance tuning topics to help leverage the virtualization strengths of the POWER® platform to solve clients' system resource utilization challenges, and maximize system throughput and capacity. We examine the performance monitoring tools, utilities, documentation, and other resources available to help technical teams provide optimized business solutions and support for applications running on IBM POWER systems' virtualized environments. The book offers application performance examples deployed on IBM Power Systems™ utilizing performance monitoring tools to leverage the comprehensive set of POWER virtualization features: Logical Partitions (LPARs), micro-partitioning, active memory sharing, workload partitions, and more. We provide a well-defined and documented performance tuning model in a POWER system virtualized environment to help you plan a foundation for scaling, capacity, and optimization. This book targets technical professionals (technical consultants, technical support staff, IT Architects, and IT Specialists) responsible for providing solutions and support on IBM POWER systems, including performance tuning.

Windows Internals, Part 2 - Mark Russinovich 2020-07-06

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

Reversing - Eldad Eilam 2011-12-12

Beginning with a basic primer on reverse engineering-including computer internals, operating systems, and assembly language-and then discussing the various applications of reverse engineering, this book provides readers with practical, in-depth techniques for software reverse engineering. The book is broken into two parts, the first deals with security-related reverse engineering and the second explores the more practical aspects of reverse engineering. In addition, the author explains how to reverse engineer a third-party software library to improve interfacing and how to reverse engineer a competitor's software to build a better product. * The first popular book to show how software reverse engineering can help defend against security threats, speed up development, and unlock the secrets of competitive products * Helps developers plug security holes by demonstrating how hackers exploit reverse engineering techniques to crack copy-protection schemes and identify software targets for viruses and other malware * Offers a primer on advanced reverse-engineering, delving into "disassembly"-code-level reverse engineering-and explaining how to decipher assembly language

System Engineering Analysis, Design, and Development - Charles S. Wasson 2015-11-16

Praise for the first edition: "This excellent text will be useful to every system engineer (SE) regardless of the domain. It covers ALL relevant SE material and does so in a very clear, methodical fashion. The breadth and depth of the author's presentation of SE principles and practices is outstanding." -Philip Allen This textbook presents a comprehensive, step-by-step guide to System Engineering analysis, design, and development via an integrated set of concepts, principles, practices, and methodologies. The methods presented in this text apply to any type of human system -- small, medium, and large organizational systems and system development projects delivering engineered systems or services across multiple business sectors such as medical, transportation, financial, educational, governmental, aerospace and defense, utilities, political, and charity, among others. Provides a common focal point for "bridging the gap" between and unifying System Users, System Acquirers, multi-discipline System Engineering, and Project, Functional, and Executive Management education, knowledge, and decision-making for developing systems, products, or services Each chapter provides definitions of key terms, guiding principles, examples, author's notes, real-world examples, and exercises, which highlight and reinforce key SE&D concepts and practices Addresses concepts

employed in Model-Based Systems Engineering (MBSE), Model-Driven Design (MDD), Unified Modeling Language (UMLTM) / Systems Modeling Language (SysMLTM), and Agile/Spiral/V-Model Development such as user needs, stories, and use cases analysis; specification development; system architecture development; User-Centric System Design (UCSD); interface definition & control; system integration & test; and Verification & Validation (V&V) Highlights/introduces a new 21st Century Systems Engineering & Development (SE&D) paradigm that is easy to understand and implement. Provides practices that are critical staging points for technical decision making such as Technical Strategy Development; Life Cycle requirements; Phases, Modes, & States; SE Process; Requirements Derivation; System Architecture Development, User-Centric System Design (UCSD); Engineering Standards, Coordinate Systems, and Conventions; et al. Thoroughly illustrated, with end-of-chapter exercises and numerous case studies and examples, Systems Engineering Analysis, Design, and Development, Second Edition is a primary textbook for multi-discipline, engineering, system analysis, and project management undergraduate/graduate level students and a valuable reference for professionals.

Programming Massively Parallel Processors - David B. Kirk 2012-12-31

Programming Massively Parallel Processors: A Hands-on Approach, Second Edition, teaches students how to program massively parallel processors. It offers a detailed discussion of various techniques for constructing parallel programs. Case studies are used to demonstrate the development process, which begins with computational thinking and ends with effective and efficient parallel programs. This guide shows both student and professional alike the basic concepts of parallel programming and GPU architecture. Topics of performance, floating-point format, parallel patterns, and dynamic parallelism are covered in depth. This revised edition contains more parallel programming examples, commonly-used libraries such as Thrust, and explanations of the latest tools. It also provides new coverage of CUDA 5.0, improved performance, enhanced development tools, increased hardware support, and more; increased coverage of related technology, OpenCL and new material on algorithm patterns, GPU clusters, host programming, and data parallelism; and two new case studies (on MRI reconstruction and molecular visualization) that explore the latest applications of CUDA and GPUs for scientific research and high-performance computing. This book should be a valuable resource for advanced students, software engineers, programmers, and hardware engineers. New coverage of CUDA 5.0, improved performance, enhanced development tools, increased hardware support, and more Increased coverage of related technology, OpenCL and new material on algorithm patterns, GPU clusters, host programming, and data parallelism Two new case studies (on MRI reconstruction and molecular visualization) explore the latest applications of CUDA and GPUs for scientific research and high-performance computing

Systems Analysis and Design in a Changing World - John W. Satzinger 2015-02-01

Refined and streamlined, SYSTEMS ANALYSIS AND DESIGN IN A CHANGING WORLD, 7E helps students develop the conceptual, technical, and managerial foundations for systems analysis design and implementation as well as project management principles for systems development. Using case driven techniques, the succinct 14-chapter text focuses on content that is key for success in today's market. The authors' highly effective presentation teaches both traditional (structured) and object-oriented (OO) approaches to systems analysis and design. The book highlights use cases, use diagrams, and use case descriptions required for a modeling approach, while demonstrating their application to traditional, web development, object-oriented, and service-oriented architecture approaches. The Seventh Edition's refined sequence of topics makes it easier to read and understand than ever. Regrouped analysis and design chapters provide more flexibility in course organization. Additionally, the text's running cases have been completely updated and now include a stronger focus on connectivity in applications. Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version.

SQL Server Advanced Troubleshooting and Performance Tuning - Dmitri Korotkevitch 2022-05-17

This book provides a comprehensive overview on best practices for troubleshooting and performance tuning in SQL Server. It reviews how to identify performance issues, how to troubleshoot the system in a holistic fashion, and how to properly prioritize tuning efforts in order to induce the best system performance possible. The book also discusses interdependencies between database components, while

spotlighting ways to avoid the bottlenecks that can be triggered by those dependencies. The troubleshooting and performance tuning techniques presented in the book are compatible with any version of SQL Server. They cover both on-premise and Cloud-based SQL Server installations, including Microsoft Azure SQL Databases and Amazon SQL Server RDS. Reflecting the approaches used by many high-end SQL Server consultants, *SQL Server Advanced Troubleshooting and Performance Tuning* is a valuable resource that will help readers master troubleshooting and performance tuning skills and get the best performance out of SQL Server.

Windows PowerShell 3.0 Step by Step - Ed Wilson 2013-02-15

Your hands-on, step-by-step guide to automating Windows administration with Windows PowerShell 3.0. Teach yourself the fundamentals of Windows PowerShell 3.0 command line interface and scripting language—one step at a time. Written by a leading scripting expert, this practical tutorial delivers learn-by-doing exercises, timesaving tips, and hands-on sample scripts for performing administrative tasks on both local and remote Windows systems. Discover how to: Use built-in cmdlets to execute commands Write scripts to handle recurring tasks Use providers to access information beyond the shell environment Configure network components with Windows Management Instrumentation Manage users, groups, and computers with Active Directory services Execute scripts to administer and troubleshoot Microsoft Exchange Server 2010

Windows Internals - Brian Catlin 2016-02-29

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.

Exam Ref Da-100 Analyzing Data with Microsoft Power BI - Daniil Maslyuk 2021-03

Direct from Microsoft, this Exam Ref is the official study guide for the new Microsoft DA-100 Analyzing Data with Microsoft Power BI certification exam. Exam Ref DA-100 Analyzing Data with Microsoft Power BI offers professional-level preparation that helps candidates maximize their exam performance and sharpen their skills on the job. It focuses on specific areas of expertise modern IT professionals need to demonstrate real-world mastery of Power BI data analysis and visualization. Coverage includes: Preparing data: acquiring, profiling, cleaning, transforming, and loading data Modeling data: designing and developing data models, creating measures with DAX, and optimizing model performance Visualizing data: creating reports and dashboards, and enriching reports for usability Analyzing data: enhancing reports to expose insights, and performing advanced analysis Deploying and maintaining deliverables: managing datasets; creating and managing workspaces Microsoft Exam Ref publications stand apart from third-party study guides because they: Provide guidance from Microsoft, the creator of Microsoft certification exams Target IT professional-level exam candidates with content focused on their needs, not "one-size-fits-all" content Streamline study by organizing material according to the exam's objective domain (OD), covering one functional group and its objectives in each chapter Feature Thought Experiments to guide candidates through a set of "what if?" scenarios, and prepare them more effectively for Pro-level style exam questions Explore big picture thinking around the planning and design aspects of the IT pro's job role For more information on Exam DA-100 and the Microsoft Certified: Data Analyst Associate credential, visit <https://docs.microsoft.com/en-us/learn/certifications/data-analyst-associate>.

Windows Internals - David A. Solomon 2009-06-17

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

Computer Organization & Architecture 7e - Stallings 2008-02

Operating System Security - Trent Jaeger 2008

"Operating systems provide the fundamental mechanisms for securing computer processing. Since the 1960s, operating systems designers have explored how to build "secure" operating systems - operating systems whose mechanisms protect the system against a motivated adversary. Recently, the importance of ensuring such security has become a mainstream issue for all operating systems. In this book, we examine past research that outlines the requirements for a secure operating system and research that implements example systems that aim for such requirements. For system designs that aimed to satisfy these requirements, we see that the complexity of software systems often results in implementation challenges that we are still exploring to this day. However, if a system design does not aim for achieving the secure operating system requirements, then its security features fail to protect the system in a myriad of ways. We also study systems that have been retro-fit with secure operating system features after an initial deployment. In all cases, the conflict between function on one hand and security on the other leads to difficult choices and the potential for unwise compromises. From this book, we hope that systems designers and implementers will learn the requirements for operating systems that effectively enforce security and will better understand how to manage the balance between function and security."--BOOK JACKET.

Understanding Operating Systems - Ida M. Flynn 2001

UNDERSTANDING OPERATING SYSTEMS provides a basic understanding of operating systems theory, a comparison of the major operating systems in use, and a description of the technical and operational tradeoffs inherent in each. The effective two-part organization covers the theory of operating systems, their historical roots, and their conceptual basis (which does not change substantially), culminating with how these theories are applied in the specifics of five operating systems (which evolve constantly). The authors explain this technical subject in a not-so-technical manner, providing enough detail to illustrate the complexities of stand-alone and networked operating systems. UNDERSTANDING OPERATING SYSTEMS is written in a clear, conversational style with concrete examples and illustrations that readers easily grasp.

Embedded Systems Architecture - Tammy Noergaard 2012-12-31

Embedded Systems Architecture is a practical and technical guide to understanding the components that make up an embedded system's architecture. This book is perfect for those starting out as technical professionals such as engineers, programmers and designers of embedded systems; and also for students of computer science, computer engineering and electrical engineering. It gives a much-needed 'big picture' for recently graduated engineers grappling with understanding the design of real-world systems for the first time, and provides professionals with a systems-level picture of the key elements that can go into an embedded design, providing a firm foundation on which to build their skills. Real-world approach to the fundamentals, as well as the design and architecture process, makes this book a popular reference for the daunted or the inexperienced: if in doubt, the answer is in here! Fully updated with new coverage of FPGAs, testing, middleware and the latest programming techniques in C, plus complete source code and sample code, reference designs and tools online make this the complete package Visit the companion web site at <http://booksite.elsevier.com/9780123821966/> for source code, design examples, data sheets and more A true introductory book, provides a comprehensive get up and running reference for those new to the field, and updating skills: assumes no prior knowledge beyond undergrad level electrical engineering

Addresses the needs of practicing engineers, enabling it to get to the point more directly, and cover more ground. Covers hardware, software and middleware in a single volume Includes a library of design examples and design tools, plus a complete set of source code and embedded systems design tutorial materials from companion website

Operating System Concepts Essentials, 2nd Edition - Abraham Silberschatz 2013-11-06

By staying current, remaining relevant, and adapting to emerging course needs, Operating System Concepts by Abraham Silberschatz, Peter Baer Galvin and Greg Gagne has defined the operating systems course through nine editions. This second edition of the Essentials version is based on the recent ninth edition of the original text. Operating System Concepts Essentials comprises a subset of chapters of the ninth edition for professors who want a shorter text and do not cover all the topics in the ninth edition. The new second edition of Essentials will be available as an ebook at a very attractive price for students. The ebook will have live links for the bibliography, cross-references between sections and chapters where appropriate, and new chapter review questions. A two-color printed version is also available.

Operating Systems - William Stallings 2009

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.

Windows 10 System Programming, Part 1 - Pavel Yosifovich 2020-04-11

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.

The Shellcoder's Handbook - Chris Anley 2011-02-16

This much-anticipated revision, written by the ultimate group of top security experts in the world, features 40 percent new content on how to find security holes in any operating system or application New material addresses the many new exploitation techniques that have been discovered since the first edition, including attacking "unbreakable" software packages such as McAfee's Entercept, Mac OS X, XP, Office 2003, and Vista Also features the first-ever published information on exploiting Cisco's IOS, with content that has never before been explored The companion Web site features downloadable code files

Programming Windows - Charles Petzold 1998-11-11

"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.

Game Hacking - Nick Cano 2016-07-01

You don't need to be a wizard to transform a game you like into a game you love. Imagine if you could give your favorite PC game a more informative heads-up display or instantly collect all that loot from your latest epic battle. Bring your knowledge of Windows-based development and memory management, and Game Hacking will teach you what you need to become a true game hacker. Learn the basics, like reverse engineering, assembly code analysis, programmatic memory manipulation, and code injection, and hone your new skills with hands-on example code and practice binaries. Level up as you learn how to: -Scan and modify memory with Cheat Engine -Explore program structure and execution flow with OllyDbg -Log processes and pinpoint useful data files with Process Monitor -Manipulate control flow through NOPing, hooking, and more -Locate and dissect common game memory structures You'll even discover the secrets behind common game bots, including: -Extrasensory perception hacks, such as wallhacks and heads-up displays -Responsive hacks, such as autohealers and combo bots -Bots with artificial intelligence, such as cave walkers and automatic looters Game hacking might seem like black magic, but it doesn't have to be. Once you understand how bots are made, you'll be better positioned to defend against them in your own games. Journey through the inner workings of PC games with Game Hacking, and leave with a deeper understanding of both game design and computer security.

Essential COM - Don Box 1998

Offering a distinctive approach, this book will teach readers not only how to use COM but how to think in COM. COM can greatly improve the efficiency of applications, but COM fluency is a difficult task. The book is a top resource for developers who need to make the transition from superficial understanding to deep knowledge.

Windows Operating System Fundamentals - Crystal Panek 2019-10-24

A clear and concise resource, the ideal guide to Windows for IT beginners Windows Operating System Fundamentals covers everything you need to know about Windows 10. Learn to master the installation process and discover the cool new features of Windows 10, including Edge, Cortana, and more. And because this book follows the Windows Server Operating System Fundamentals MTA Certification, it is perfect for IT professionals who are new to the industry and need an entry point into IT certification. This book covers the basics of the Windows operating system, from setting up user accounts to using the start menu, running applications, and setting up internet access. You'll be prepared to upgrade a computer to Windows 10 and to master the basic tools necessary to work effectively within the OS. Each chapter closes with a quiz so you can test your knowledge before moving to the next section. Learn to configure your Windows 10 operating system, optimize account controls, configure user profiles, customize system options, and more! Understand how to use Windows applications and tools for managing LAN settings, configuring Microsoft Edge, and setting up remote assistance Use Windows to manage devices like printers, cloud storage, OneDrive, and system devices Maintain, update, protect, and backup your data by configuring Windows Update, automated backup, and system recovery and restore With Windows Operating System Fundamentals, IT Professionals looking to understand more about Windows 10 will gain the knowledge to effectively use applications, navigate files and folders, and upgrade client systems. Thanks to the troubleshooting tools and tips in this book, you can apply your new skills in real-world situations and feel confident while taking the certification exam.

Windows Internals, Part 1 - Pavel Yosifovich 2017-05-05

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