
Download Free Inside Windows Debugging A Practical Guide To Debugging And Tracing Strategies In Windows By Tarik Souлами May 21 201

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LTNWGA - DRAKE SANAA

Written by the founder of DumpAnalysis.org, this resource can help technical support and escalation engineers and Windows software testers without the knowledge of assembly language master necessary prerequisites to understand and start debugging and crash dump analysis on X64 Windows platforms.

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

This book enables intermediate and advanced programmers the kind of depth that's really needed, such as advanced window functionality, macros, advanced debugging, and add-ins, etc. With this book, developers will learn the VS.NET development environment from top to bottom.

Get the essential, straightforward information you need—and master the core topics for debugging applications with Microsoft Visual Studio 2005. Debugging expert John Robbins offers practical answers to real-world development questions, including code samples in Microsoft Visual C# and Visual Basic. You'll learn the debugging techniques and tools to debug more efficiently and help ensure top-quality code. Discover how to: Arm yourself with tools and techniques that contribute to long-term success in the debugging battlefield Implement John's practical debugging process to sniff out bugs—including "freak" bugs Catch bugs during development with assertions, tracers, and comments Set advanced breakpoints in your debugger to specify exact trigger conditions Use the Watch window, Data Tips, and Visualizers to see key data quickly Employ other debugging tools, such as WinDBG, SOS, and ADPlus Write macros and add-ins to extend the Visual Studio integrated development environment Debug with Code Analysis—and learn to write your own rules PLUS—Get code samples on the Web

Capitalize on the faster GPU processors in today's computers with the C++ AMP code library—and bring massive parallelism to your project. With this practical book, experienced C++ developers will learn parallel programming fundamentals with C++ AMP through detailed examples, code snippets, and case studies. Learn the advantages of parallelism and get best practices for harnessing this technology in your applications. Discover how to: Gain greater code performance using graphics processing units (GPUs) Choose accelerators that enable you to write code for GPUs Apply thread tiles, tile barriers, and tile static memory Debug C++ AMP code with Microsoft Visual Studio Use profiling tools to track the performance of your code

For professional software developers, debugging is a way of life. This book is the definitive guide to Windows debugging, providing developers with the strategies and techniques they need to fulfill one of their most important responsibilities efficiently and effectively. Debugging Windows Programs shows readers how to prevent bugs by taking full advantage of the Visual C++ development tools and writing code in a way that makes certain types of bugs impossible. They also will learn how to reveal bugs with debugging statements that force bugs to expose themselves when the program is executed, and how to make the most of debugging tools and features available in

Windows, Visual C++, MFC, and ATL. The authors provide specific solutions to the most common debugging problems, including memory corruption, resource leaks, stack problems, release build problems, finding crash locations, and multithreading problems. These essential topics are covered: The debugging process Writing C++ code for debugging Strategically using assertions, trace statements, and exceptions Windows postmortem debugging using Dr. Watson and MAP files Using the Visual C++ debugger Debugging memory Debugging multithreaded programs Debugging COM Each chapter provides developers with exactly what they need to master the subject and improve development productivity and software quality. Comprehensive, current, and practical, Debugging Windows Programs helps developers understand the debugging process and make the most of the Visual C++ debugging tools. 020170238XB04062001

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!

Every software developer and IT professional understands the crucial importance of effective debugging. Often, debugging consumes most of a developer's workday, and mastering the required techniques and skills can take a lifetime. In Effective Debugging, Diomidis Spinellis helps experienced programmers accelerate their journey to mastery, by systematically categorizing, explaining, and illustrating the most useful debugging methods, strategies, techniques, and tools. Drawing on more than thirty-five years of experience, Spinellis expands your arsenal of debugging techniques, helping you choose the best approaches for each challenge. He presents vendor-neutral, example-rich advice on general principles, high-level strategies, concrete techniques, high-efficiency tools, creative tricks, and the behavioral traits associated with effective debugging. Spinellis's 66 expert techniques address every facet of debugging and are illustrated with step-by-step instructions and actual code. He addresses the full spectrum of problems that can arise in modern software systems, especially problems caused by complex interactions among components and services running on hosts scattered around the planet. Whether you're debugging isolated runtime errors or catastrophic enterprise system failures, this guide will help you get the job done—more quickly, and with less pain. Key features include High-level strategies and methods for addressing diverse software failures Specific techniques to apply when programming, compiling, and running code Better ways to make the most of your debugger General-purpose skills and tools worth investing in Advanced ideas and techniques for escaping dead-ends and the maze of complexity Advice for making programs easier to debug Specialized approaches for debugging multithreaded, asynchronous, and embedded code Bug avoidance through improved software design, construction, and management

A C# developer's book and eBook guide to the features and programming interfaces of Windows Workflow Foundation.

An authoritative guide to Windows NT driver development, now completely revised and updated. The CD-ROM includes all source code, plus Microsoft hardware standards documents, demo soft-

ware, and more.

Currently, there aren't any good books on Windows graphics programming. Programmers looking for help are left to muddle their way through online documentation and API books that don't focus on this topic. This book paves new ground, covering actual graphics implementation, hidden restrictions, and performance issues programmers need to know about.

Anyone who develops software for a living needs a proven way to produce it better, faster, and cheaper. The Productive Programmer offers critical timesaving and productivity tools that you can adopt right away, no matter what platform you use. Master developer Neal Ford not only offers advice on the mechanics of productivity-how to work smarter, spurn interruptions, get the most out your computer, and avoid repetition-he also details valuable practices that will help you elude common traps, improve your code, and become more valuable to your team. You'll learn to: Write the test before you write the code Manage the lifecycle of your objects fastidiously Build only what you need now, not what you might need later Apply ancient philosophies to software development Question authority, rather than blindly adhere to standards Make hard things easier and impossible things possible through meta-programming Be sure all code within a method is at the same level of abstraction Pick the right editor and assemble the best tools for the job This isn't theory, but the fruits of Ford's real-world experience as an Application Architect at the global IT consultancy ThoughtWorks. Whether you're a beginner or a pro with years of experience, you'll improve your work and your career with the simple and straightforward principles in The Productive Programmer.

"Solutions and examples for C++ programmers"—Cover.

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

Visual Basic 6 Complete is a one-of-a-kind computer book—valuable both for its broad content and its low price. This book contains the essentials you need to know about programming with Visual Basic and VBA, for use in building Windows applications, scripting, and extending and integrating Office applications. With Visual Basic 6 Complete, you'll learn all about building Visual Basic applications - from working with forms and controls to using the Windows API and debugging Web applications -- and you'll quickly take advantage of all that Visual Basic has to offer. Get up to speed with Visual Basic, then move on to scripting objects, VBA, and building internet applications and interactive Web sites. As you become more proficient with Visual Basic, you'll find the Visual Basic 6 Language Reference to be an invaluable daily tool. This comprehensive reference quickly puts every built-in function and statement at your fingertips. Visual Basic 6 Complete introduces you to the work of some of the finest Sybex authors, so you'll know where to go to learn even more about what's possible with Visual Basic. Inside: Introduction to Visual Basic * Mastering the Integrated De-

velopment Environment (IDE) * Working with forms and controls * Understanding object-oriented programming * Building sample VB applications Practical Visual Basic * Debugging Visual Basic applications * Extending VB with the Windows API * Accessing the Windows Registry * Building screen savers, and displaying an icon in the system tray with VB Visual Basic Scripting and the Internet * Adding scripting support to your application * Scripting objects * Building Web-based applications with VB Visual Basic for Applications * An Introduction to VBA * The Word Object model * The Access Object model revisited * Professional development with VBA Visual Basic References * Complete Visual Basic 6 Language Reference * Visual Basic 6 Function Reference

When it comes to network security, many users and administrators are running scared, and justifiably so. The sophistication of attacks against computer systems increases with each new Internet worm. What's the worst an attacker can do to you? You'd better find out, right? That's what Security Warrior teaches you. Based on the principle that the only way to defend yourself is to understand your attacker in depth, Security Warrior reveals how your systems can be attacked. Covering everything from reverse engineering to SQL attacks, and including topics like social engineering, antireversing, and common attacks against UNIX and Windows systems, this book teaches you to know your enemy and how to be prepared to do battle. Security Warrior places particular emphasis on reverse engineering. RE is a fundamental skill for the administrator, who must be aware of all kinds of malware that can be installed on his machines -- trojaned binaries, "spyware" that looks innocuous but that sends private data back to its creator, and more. This is the only book to discuss reverse engineering for Linux or Windows CE. It's also the only book that shows you how SQL injection works, enabling you to inspect your database and web applications for vulnerability. Security Warrior is the most comprehensive and up-to-date book covering the art of computer war: attacks against computer systems and their defenses. It's often scary, and never comforting. If you're on the front lines, defending your site against attackers, you need this book. On your shelf--and in your hands.

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

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.

The ability to solve difficult problems is what makes a good engineer great. This book teaches techniques and tools for developers to tackle even the most persistent bugs. You'll find that tough is-

ues can be made simple with the right knowledge, tools, and practices. Practical Debugging for .NET Developers will transform you into the guy or gal who everyone turns to for help. Issues covered include .NET Core, C#, Memory Leaks, Performance Problems, ASP.NET, Performance Counters, ETW Events, Production Debugging, Memory Pressure, Visual Studio, Hangs, Profiling, Deadlocks, Crashes, Memory Dumps, and Azure. * Discover the best tools in the industry to diagnose and fix problems * Learn advanced debugging techniques with Visual Studio * Fix memory leaks and memory pressure issues * Detect, profile, and fix performance problems * Find the root cause of crashes and hangs * Debug production code and third-party code * Analyze ASP.NET applications for slow performance, failed requests, and hangs * Use dump files, Performance Counters, and ETW events to investigate what happens under the hood * Troubleshoot cloud environments, including Azure VMs and App Services * Code samples in C# * Covering .NET Core, .NET Framework, Windows, and Linux

"Mario Hewardt's Advanced .NET Debugging is an excellent resource for both beginner and experienced developers working with .NET. The book is also packed with many debugging tips and discussions of CLR internals, which will benefit developers architecting software." -Jeffrey Richter, consultant, trainer, and author at Wintellect "Mario has done it again. His Advanced Windows Debugging (coauthored with Daniel Pravat) is an invaluable resource for native code debugging, and Advanced .NET Debugging achieves the same quality, clarity, and breadth to make it just as invaluable for .NET debugging." -Mark Russinovich, Technical Fellow, Microsoft Corporation The Only Complete, Practical Guide to Fixing the Toughest .NET Bugs Advanced .NET Debugging is the first focused, pragmatic guide to tracking down today's most complex and challenging .NET application bugs. It is the only book to focus entirely on using powerful native debugging tools, including WinDBG, NTSD, and CDB, to debug .NET applications. Using these tools, author Mario Hewardt explains how to identify the real root causes of problems—far more quickly than you ever could with other debuggers. Hewardt first introduces the key concepts needed to successfully use .NET's native debuggers. Next, he turns to sophisticated debugging techniques, using real-world examples that demonstrate many common C# programming errors. This book enables you to Make practical use of postmortem debugging, including PowerDBG and other "power tools" Understand the debugging details and implications of the new .NET CLR 4.0 Master and successfully use Debugging Tools for Windows, as well as SOS, SOSEX, CLR Profiler, and other powerful tools Gain a deeper, more practical understanding of CLR internals, such as examining thread-specific data, managed heap and garbage collector, interoperability layer, and .NET exceptions Solve difficult synchronization problems, managed heap problems, interoperability problems, and much more Generate and successfully analyze crash dumps A companion web site (advanceddotnetdebugging.com) contains all sample code, examples, and bonus content.

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

Gain a deeper understanding of software and learn to be a better programmer with this unique book of challenging code exercises.

This training course is a combined, reformatted, improved, and modernized version of the two previous books (x64) Windows Debugging: Practical Foundations, that drew inspiration from the original lectures we developed almost 18 years ago to train support and escalation engineers in debugging and crash dump analysis of memory dumps from Windows applications, services, and systems. At that time, when thinking about what material to deliver, we realized that a solid understanding of fundamentals like pointers is needed to analyze stack traces beyond a few WinDbg commands. Therefore, this book is not about bugs or debugging techniques but about the background knowledge everyone needs to start experimenting with WinDbg and learn from practical experi-

ence and read other advanced debugging books. This body of knowledge is what the author of this book possessed before starting memory dump analysis using WinDbg 18 years ago, which resulted in the number one debugging bestseller: multi-volume Memory Dump Analysis Anthology. Now, in retrospect, we see these practical foundations as relevant and necessary to acquire for beginners as they were 18 years ago because operating systems internals, assembly language, and compiler architecture haven't changed much in those years. The book contains two separate sets of chapters and corresponding illustrations. They are named Chapter x86.NN and Chapter x64.NN respectively. The new format makes switching between and comparing x86 and x64 versions easy. Both sets of chapters can be read independently. We included x86 chapters because many 3rd-party Windows applications are still 32-bit and executed in 32-bit compatibility mode on x64 Windows systems. Almost 5 years have passed since the first edition of the combined training course that used the earlier version of Windows 10. Since then, we have also published "Practical Foundations of Linux Debugging, Disassembling, Reversing" and "Practical Foundations of ARM64 Linux Debugging, Disassembling, Reversing" books. At that time, we thought about revising our Windows course. Since then, Windows 11 appeared, and we also added Docker support for most of our Windows memory dump analysis courses. While working on the "Accelerated Windows Debugging 4D" course, we decided to make the second edition of Practical Foundations of Windows Debugging based on WinDbg from Windows 11 SDK and Visual Studio 2022 build tools and an optional Docker support for the exercise environment. We also changed the "=" operator to "" in pseudo-code for x64 AT&T disassembly syntax flavor and " The book is useful for: - Software technical support and escalation engineers; - Software engineers coming from managed code or JVM background; - Software testers; - Engineers coming from non-Wintel environments; - Windows C/C++ software engineers without assembly language background; - Security researchers without x86/x64 assembly language background; - Beginners learning Windows software reverse engineering techniques; This introductory training course can complement the more advanced course Accelerated Disassembly, Reconstruction and Reversing, Revised Edition. It may also help with advanced exercises in Accelerated Windows Memory Dump Analysis books. This book can also be used as an Intel assembly language and Windows debugging supplement for relevant undergraduate-level courses. This book gives detailed instructions on how to use, optimize, and troubleshoot mod_perl. It shows how to get this Apache module running quickly and easily.

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

What others in the trenches say about The Pragmatic Programmer... "The cool thing about this book is that it's great for keeping the programming process fresh. The book helps you to continue to grow and clearly comes from people who have been there." —Kent Beck, author of Extreme Programming Explained: Embrace Change "I found this book to be a great mix of solid advice and wonderful analogies!" —Martin Fowler, author of Refactoring and UML Distilled "I would buy a copy, read it twice, then tell all my colleagues to run out and grab a copy. This is a book I would never loan because I would worry about it being lost." —Kevin Ruland, Management Science, MSG-Logistics "The wisdom and practical experience of the authors is obvious. The topics presented are relevant and useful.... By far its greatest strength for me has been the outstanding analogies—tracer bullets, broken windows, and the fabulous helicopter-based explanation of the need for orthogonality, especially in a crisis situation. I have little doubt that this book will eventually become an excellent source of useful information for journeymen programmers and expert mentors alike." —John Lakos, author of Large-Scale C++ Software Design "This is the sort of book I will buy a dozen copies of when it comes out so I can give it to my clients." —Eric Vought, Software Engineer "Most modern books on software development fail to cover the basics of what makes a great software de-

veloper, instead spending their time on syntax or technology where in reality the greatest leverage possible for any software team is in having talented developers who really know their craft well. An excellent book.” —Pete McBreen, Independent Consultant “Since reading this book, I have implemented many of the practical suggestions and tips it contains. Across the board, they have saved my company time and money while helping me get my job done quicker! This should be a desktop reference for everyone who works with code for a living.” —Jared Richardson, Senior Software Developer, iRenaissance, Inc. “I would like to see this issued to every new employee at my company....” —Chris Cleeland, Senior Software Engineer, Object Computing, Inc. “If I’m putting together a project, it’s the authors of this book that I want. . . . And failing that I’d settle for people who’ve read their book.” —Ward Cunningham Straight from the programming trenches, The Pragmatic Programmer cuts through the increasing specialization and technicalities of modern software development to examine the core process—taking a requirement and producing working, maintainable code that delights its users. It covers topics ranging from personal responsibility and career development to architectural techniques for keeping your code flexible and easy to adapt and reuse. Read this book, and you’ll learn how to Fight software rot; Avoid the trap of duplicating knowledge; Write flexible, dynamic, and adaptable code; Avoid programming by coincidence; Bullet-proof your code with contracts, assertions, and exceptions; Capture real requirements; Test ruthlessly and effectively; Delight your users; Build teams of pragmatic programmers; and Make your developments more precise with automation. Written as a series of self-contained sections and filled with entertaining anecdotes, thoughtful examples, and interesting analogies, The Pragmatic Programmer illustrates the best practices and major pitfalls of many different aspects of software development. Whether you’re a new coder, an experienced programmer, or a manager responsible for software projects, use these lessons daily, and you’ll quickly see improvements in personal productivity, accuracy, and job satisfaction. You’ll learn skills and develop habits and attitudes that form the foundation for long-term success in your career. You’ll become a Pragmatic Programmer.

This book gives Abaqus users who make use of finite-element models in academic or practitioner-based research the in-depth program knowledge that allows them to debug a structural analysis model. The book provides many methods and guidelines for different analysis types and modes, that will help readers to solve problems that can arise with Abaqus if a structural model fails to converge to a solution. The use of Abaqus affords a general checklist approach to debugging analysis models, which can also be applied to structural analysis. The author uses step-by-step methods and detailed explanations of special features in order to identify the solutions to a variety of problems with finite-element models. The book promotes:

- a diagnostic mode of thinking concerning error messages;
- better material definition and the writing of user material subroutines;
- work with the Abaqus mesher and best practice in doing so;
- the writing of user element subroutines and contact features with convergence issues; and
- consideration of hardware and software issues and a Windows HPC cluster solution.

The methods and information provided facilitate job diagnostics and help to obtain converged solutions for finite-element models regarding structural component assemblies in static or dynamic analysis. The troubleshooting advice ensures that these solutions are both high-quality and cost-effective according to practical experience. The book offers an in-depth guide for students learning about Abaqus, as each problem and solution are complemented by examples and straightforward explanations. It is also useful for academics and structural engineers wishing to debug Abaqus models on the basis of error and warning messages that arise during finite-element modelling processing.

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

Master the art of identifying vulnerabilities within the Windows OS and develop the desired solu-

tions for it using Kali Linux. Key Features Identify the vulnerabilities in your system using Kali Linux 2018.02 Discover the art of exploiting Windows kernel drivers Get to know several bypassing techniques to gain control of your Windows environment Book Description Windows has always been the go-to platform for users around the globe to perform administration and ad hoc tasks, in settings that range from small offices to global enterprises, and this massive footprint makes securing Windows a unique challenge. This book will enable you to distinguish yourself to your clients. In this book, you’ll learn advanced techniques to attack Windows environments from the indispensable toolkit that is Kali Linux. We’ll work through core network hacking concepts and advanced Windows exploitation techniques, such as stack and heap overflows, precision heap spraying, and kernel exploitation, using coding principles that allow you to leverage powerful Python scripts and shellcode. We’ll wrap up with post-exploitation strategies that enable you to go deeper and keep your access. Finally, we’ll introduce kernel hacking fundamentals and fuzzing testing, so you can discover vulnerabilities and write custom exploits. By the end of this book, you’ll be well-versed in identifying vulnerabilities within the Windows OS and developing the desired solutions for them. What you will learn Get to know advanced pen testing techniques with Kali Linux Gain an understanding of Kali Linux tools and methods from behind the scenes See how to use Kali Linux at an advanced level Understand the exploitation of Windows kernel drivers Understand advanced Windows concepts and protections, and how to bypass them using Kali Linux Discover Windows exploitation techniques, such as stack and heap overflows and kernel exploitation, through coding principles Who this book is for This book is for penetration testers, ethical hackers, and individuals breaking into the pentesting role after demonstrating an advanced skill in boot camps. Prior experience with Windows exploitation, Kali Linux, and some Windows debugging tools is necessary Widely considered one of the best practical guides to programming, Steve McConnell’s original *CODE COMPLETE* has been helping developers write better software for more than a decade. Now this classic book has been fully updated and revised with leading-edge practices—and hundreds of new code samples—illustrating the art and science of software construction. Capturing the body of knowledge available from research, academia, and everyday commercial practice, McConnell synthesizes the most effective techniques and must-know principles into clear, pragmatic guidance. No matter what your experience level, development environment, or project size, this book will inform and stimulate your thinking—and help you build the highest quality code. Discover the timeless techniques and strategies that help you: Design for minimum complexity and maximum creativity Reap the benefits of collaborative development Apply defensive programming techniques to reduce and flush out errors Exploit opportunities to refactor—or evolve—code, and do it safely Use construction practices that are right-weight for your project Debug problems quickly and effectively Resolve critical construction issues early and correctly Build quality into the beginning, middle, and end of your project

The full transcript of Memory Dump Analysis Services Training with 10 step-by-step exercises, notes, and selected questions and answers. Learn how to navigate through memory dump space and Windows data structures to troubleshoot and debug complex software incidents. The training uses a unique and innovative pattern-driven analysis approach to speed up the learning curve. It consists of practical step-by-step exercises using WinDbg to diagnose structural and behavioural patterns in 64-bit kernel and complete (physical) memory dumps. Additional topics include memory search, kernel linked list navigation, practical WinDbg scripting, registry, system variables and objects, device drivers and I/O. Prerequisites are basic and intermediate level Windows memory dump analysis: ability to list processors, processes, threads, modules, apply symbols, walk through stack traces and raw stack data, diagnose patterns such as heap corruption, CPU spike, memory and handle leaks, access violation, stack overflow, critical section and resource wait chains and deadlocks. If you don’t feel comfortable with prerequisites then Accelerated Windows Memory Dump Analysis training book is recommended before purchasing and reading this book course. Audience: Software developers, software technical support and escalation engineers, reverse and security research engineers. The 2nd edition contains updated exercises for the latest WinDbg version from Windows SDK 8.1.

Provides information on effective Windows debugging and tracing techniques.

Analyzing how hacks are done, so as to stop them in the future Reverse engineering is the process of analyzing hardware or software and understanding it, without having access to the source code or design documents. Hackers are able to reverse engineer systems and exploit what they find with scary results. Now the goodguys can use the same tools to thwart these threats. Practical Reverse Engineering goes under the hood of reverse engineering for security analysts, security engineers,

and system programmers, so they can learn how to use these same processes to stop hackers in their tracks. The book covers x86, x64, and ARM (the first book to cover all three); Windows kernel-mode code rootkits and drivers; virtual machine protection techniques; and much more. Best of all, it offers a systematic approach to the material, with plenty of hands-on exercises and real-world examples. Offers a systematic approach to understanding reverse engineering, with hands-on exercises and real-world examples Covers x86, x64, and advanced RISC machine (ARM) architectures as well as deobfuscation and virtual machine protection techniques Provides special coverage of Windows kernel-mode code (rootkits/drivers), a topic not often covered elsewhere, and explains how to analyze drivers step by step Demystifies topics that have a steep learning curve Includes a bonus chapter on reverse engineering tools Practical Reverse Engineering: Using x86, x64, ARM, Windows Kernel, and Reversing Tools provides crucial, up-to-date guidance for a broad range of IT professionals.

The book is an easy-to-follow guide with clear instructions on various mobile forensic techniques. The chapters and the topics within are structured for a smooth learning curve, which will swiftly empower you to master mobile forensics. If you are a budding forensic analyst, consultant, engineer, or a forensic professional wanting to expand your skillset, this is the book for you. The book will also be beneficial to those with an interest in mobile forensics or wanting to find data lost on mobile devices. It will be helpful to be familiar with forensics in general but no prior experience is required to follow this book.

Tips for the practical use of debuggers, such as NuMega SoftICE, Microsoft Visual Studio Debugger, and Microsoft Kernel Debugger, with minimum binding to a specific environment are disclosed in this debugger guide. How debuggers operate and how to overcome obstacles and repair debuggers is demonstrated. Programmers will learn how to look at what is inside a computer system, how to reconstruct the operating algorithm of a program distributed without source code, how to modify the program, and how to debug drivers. The use of debugging applications and drivers in Windows and Unix operating systems on Intel Pentium/DEC Alpha-based processors is also detailed.

The utility simply known as make is one of the most enduring features of both Unix and other operating systems. First invented in the 1970s, make still turns up to this day as the central engine in most programming projects; it even builds the Linux kernel. In the third edition of the classic *Managing Projects with GNU make*, readers will learn why this utility continues to hold its top position in project build software, despite many younger competitors. The premise behind make is simple: after you change source files and want to rebuild your program or other output files, make checks timestamps to see what has changed and rebuilds just what you need, without wasting time rebuilding other files. But on top of this simple principle, make layers a rich collection of options that lets you manipulate multiple directories, build different versions of programs for different platforms, and customize your builds in other ways. This edition focuses on the GNU version of make, which has deservedly become the industry standard. GNU make contains powerful extensions that are explored in this book. It is also popular because it is free software and provides a version for almost every platform, including a version for Microsoft Windows as part of the free Cygwin project. *Managing Projects with GNU make, 3rd Edition* provides guidelines on meeting the needs of large, modern projects. Also added are a number of interesting advanced topics such as portability, parallelism, and use with Java. Robert Mecklenburg, author of the third edition, has used make for decades with a variety of platforms and languages. In this book he zealously lays forth how to get your builds to be as efficient as possible, reduce maintenance, avoid errors, and thoroughly understand what make is doing. Chapters on C++ and Java provide makefile entries optimized for projects in those languages. The author even includes a discussion of the makefile used to build the book.

The full transcript of Software Diagnostics Services training with step-by-step exercises, notes, and source code to learn live local and remote debugging techniques in kernel, user process and managed .NET spaces using WinDbg debugger. The second edition was fully reworked and updated to use the latest WinDbg version and Windows 10.

Summary Go in Practice guides you through 70 real-world techniques in key areas like package management, microservice communication, and more. Following a cookbook-style Problem/Solution/Discussion format, this practical handbook builds on the foundational concepts of the Go language and introduces specific strategies you can use in your day-to-day applications. Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. About the Technology Go may be the perfect systems language. Built with simplicity, concurrency,

and modern applications in mind, Go provides the core tool set for rapidly building web, cloud, and systems applications. If you know a language like Java or C#, it's easy to get started with Go; the trick is finding the practical dirt-under-the-fingernails techniques that you need to build production-ready code. About the Book Go in Practice guides you through dozens of real-world techniques in key areas. Following a cookbook-style Problem/Solution/Discussion format, this practical handbook builds on the foundational concepts of the Go language and introduces specific strategies you can use in your day-to-day applications. You'll learn techniques for building web services, using Go in the cloud, testing and debugging, routing, network applications, and much more. After finishing this book, you will be ready to build sophisticated cloud-native Go applications. What's Inside Dozens of specific, practical Golang techniques Using Go for devops and cloudops Writing RESTful web services and microservices Practical web dev techniques About the Reader Written for experienced developers who have already started exploring Go and want to use it effectively in a production setting. About the Authors Matt Farina is a software architect at Deis. Matt Butcher is a Principal Engineer in the Advanced Technology Group at Hewlett Packard Enterprise. They are both authors, speakers, and regular open source contributors. Table of Contents PART 1 - BACKGROUND AND FUNDAMENTALS Getting into Go A solid foundation Concurrency in Go PART 2 - WELL-ROUNDED APPLICATIONS Handling errors and panic Debugging and testing PART 3 - AN INTERFACE FOR

YOUR APPLICATIONS HTML and email template patterns Serving and receiving assets and forms Working with web services PART 4 - TAKING YOUR APPLICATIONS TO THE CLOUD Using the cloud Communication between cloud services Reflection and code generation You get huge development advantages with Microsoft Visual Studio® .NET 2003—but you need a new bag of debugging tricks to take full advantage of them in today's .NET and Win32® development worlds. Learn lethally effective, real-world application debugging techniques for .NET Framework 1.1 and Windows with this fully updated programming guide. Debugging expert John Robbins expands the first edition of his classic debugging book with all-new scenarios and bug-killing tools, tips, and techniques. You'll see every .NET and Windows debugging scenario here—from XML Web services and Microsoft ASP.NET to Windows services and exceptions. Along with John's expert guidance, you get more than 6 MB of his battle-tested source code—for the tools and tactics you need to ship better software faster! Topics covered include: Where bugs come from and how to think about solving them Debugging during coding Operating system debugging support and how Win32 debuggers work Advanced debugger usage and .NET debugging with Visual Studio .NET Advanced native code techniques with Visual Studio .NET and WinDBG Extending the Visual Studio .NET integrated development environment Managed exception monitoring Flow tracing and performance

Finding source and line information with just a crash address Crash handlers Debugging Windows services and DLLs that load into services Multithreaded deadlocks Automated testing The Debug C run-time library A high-performance tracing tool for server applications Smoothing the working set Appendixes: Reading Dr. Watson log files, plus resources for .NET and Windows developers CD-ROM features: 6+ MB of professional-level source code samples written in Microsoft Visual C++®, Visual C#®, and Visual Basic® .NET Debugging Tools for Windows Microsoft .NET Framework 1.1 SDK Windows Application Compatibility Toolkit (ACT) A Note Regarding the CD or DVD The print version of this book ships with a CD or DVD. For those customers purchasing one of the digital formats in which this book is available, we are pleased to offer the CD/DVD content as a free download via O'Reilly Media's Digital Distribution services. To download this content, please visit O'Reilly's web site, search for the title of this book to find its catalog page, and click on the link below the cover image (Examples, Companion Content, or Practice Files). Note that while we provide as much of the media content as we are able via free download, we are sometimes limited by licensing restrictions. Please direct any questions or concerns to booktech@oreilly.com. This resource helps technical support, escalation engineers, and Windows software testers master necessary prerequisites to understand and start debugging and crash dump analysis on Windows platforms.