

Java Performance Tuning 2nd Edition

This book is an indispensable reference for developers and administrators who want to maximize the performance of their Sun systems. Revised and updated to cover the latest hardware and software release (including Solaris 2.6). This book presents a collaboration of content and performance information not available anywhere else.

This handbook is for anyone responsible for a Web site, from the person running a personal web server off a Linux PC at home up to large corporate site managers who wants to improve their site's performance right now.

Written in Henry Liu's clear, concise style, Java Performance and Scalability gets right to the point. With clearly explained concepts, most pertinent theories, precise step-by-step procedures, and large volume of illustrative charts and tables with highly reliable data supporting them, you gain quickly the necessary knowledge and skills for being able to cope with Java application performance and scalability issues without having to resort to more experienced professional or expensive external consultants. Specifically, it helps you learn the following knowledge and skills that are essential for you to become more effective in contributing to the success of your organization:

- * What you need to know at minimum about the architecture of modern hardware so that you can make smart decisions on when you should pour your time on your application and when you can just throw in more advanced hardware to get by.
- * What you need to know about garbage collection theories in general and how they are implemented with widely used Java Virtual Machines like HotSpot JVMs.
- * Precise methodologies, procedures, and procedures that you can start to use immediately to help you profile and tune your Java applications so you can design and build performance and scalability into your product proactively without having to face tough retrofitting decisions or even torrents of customer escalations later.

In addition, the book contains interesting data for your reference, associated with oops, memory compression, CMS garbage collection tuning, DoEscapeAnalysis, G1 versus CMS comparison, etc., all based on full scale, rigorous performance and scalability tests with real products.

A high-performance data access layer must resonate with the underlying database system. Knowing the inner workings of a relational database and the data access frameworks can make the difference between a high-performance enterprise application and one that barely crawls. This book is a journey into Java data access performance tuning. From connection management, to batch updates, fetch sizes and concurrency control mechanisms, it uncovers the inner workings of the most common Java data access frameworks. The first part aims to bridge the gap between application developers and database administrators. For this reason, it covers both JDBC and the database fundamentals that are of paramount importance when reducing transaction response times. In this first part, you'll learn about connection management, batch updates, statement caching, result set fetching and database transactions. The second part demonstrates how you can take advantage of JPA and Hibernate without compromising application performance. In this second part, you'll learn about the most efficient Hibernate mappings (basic types, associations, inheritance), fetching best practices, caching and concurrency control mechanisms. The third part is dedicated to jOOQ and its powerful SQL querying capabilities, like window functions, common table expressions, upsert, stored procedures and database functions.

WildFly Performance Tuning
The Definitive Guide
Strategies and Tactics

Vital techniques of Java 7 and polyglot programming
Analyzing and Tuning SAP Systems
Mule in Action

When Lucene first hit the scene five years ago, it was nothing short of amazing. By using this open-source, highly scalable, super-fast search engine, developers could integrate search into applications quickly and efficiently. A lot has changed since then—search has grown from a "nice-to-have" feature into an indispensable part of most enterprise applications. Lucene now powers search in diverse companies including Akamai, Netflix, LinkedIn, Technorati, HotJobs, Epiphany, FedEx, Mayo Clinic, MIT, New Scientist Magazine, and many others. Some things remain the same, though. Lucene still delivers high-performance search features in a disarmingly easy-to-use API. Due to its vibrant and diverse open-source community of developers and users, Lucene is relentlessly improving, with evolutions to APIs, significant new features such as payloads, and a huge increase (as much as 8x) in indexing speed with Lucene 2.3. And with clear writing, reusable examples, and unmatched advice on best practices, Lucene in Action, Second Edition is still the definitive guide to developing with Lucene. Purchase of the print book comes with an offer of a free PDF, ePub, and Kindle eBook from Manning. Also available is all code from the book.

Virtualizing and Tuning Large-Scale Java Platforms Technical best practices and real-world tips for optimizing enterprise Java applications on VMware vSphere® Enterprises no longer ask, "Can Java be virtualized"? Today, they ask, "Just how large can we scale virtualized Java application platforms, and just how efficiently can we tune them?" Now, the leading expert on Java virtualization answers these questions, offering detailed technical information you can apply in any production or QA/test environment. Emad Benjamin has spent nine years virtualizing VMware's own enterprise Java applications and working with nearly 300 leading VMware customers on projects of all types and sizes—from 100 JVMs to 10,000+, with heaps from 1GB to 360GB, and including massive big-data applications built on clustered JVMs. Reflecting all this experience, he shows you how to successfully size and tune any Java workload. This reference and performance "cookbook" identifies high-value optimization opportunities that apply to physical environments, virtual environments, or both. You learn how to rationalize and scale existing Java infrastructure, modernize architecture for new applications, and systematically benchmark and improve every aspect of virtualized Java performance. Throughout, Benjamin offers real performance studies, specific advice, and "from-the-trenches" insights into monitoring and troubleshooting. Coverage includes --Performance issues associated with large-scale Java platforms, including consolidation, elasticity, and flexibility --Technical considerations arising from theoretical and practical limits of Java platforms --Building horizontal in-memory databases with VMware vFabric SQLFire to improve scalability and response times --Tuning large-scale Java using throughput/parallel GC and Concurrent Mark and

Sweep (CMS) techniques --Designing and sizing a new virtualized Java environment --Designing and sizing new large-scale Java platforms when migrating from physical to virtualized deployments --Designing and sizing large-scale Java platforms for latency-sensitive in-memory databases --Real-world performance studies: SQLFire vs. RDBMS, Spring-based Java web apps, vFabric SpringTrader, application tiers, data tiers, and more --Performance differences between ESXi3, 4.1, and 5 --Best-practice considerations for each type of workload: architecture, performance, design, sizing, and high availability --Identifying bottlenecks in the load balancer, web server, Java application server, or DB Server tiers --Advanced vSphere Java performance troubleshooting with esxtop --Performance FAQs: answers to specific questions enterprise customers have asked

Become an expert at writing fast and high performant code in Clojure 1.7.0 About This Book Enhance code performance by using appropriate Clojure features Improve the efficiency of applications and plan their deployment A hands-on guide to designing Clojure programs to get the best performance Who This Book Is For This book is intended for intermediate Clojure developers who are looking to get a good grip on achieving optimum performance. Having a basic knowledge of Java would be helpful. What You Will Learn Identify performance issues in Clojure programs using different profiling tools Master techniques to achieve numerical performance in Clojure Use Criterium library to measure latency of Clojure expressions Exploit Java features in Clojure code to enhance performance Avoid reflection and boxing with type hints Understand Clojure's concurrency and state-management primitives in depth Measure and monitor performance, and understand optimization techniques In Detail Clojure treats code as data and has a macro system. It focuses on programming with immutable values and explicit progression-of-time constructs, which are intended to facilitate the development of more robust programs, particularly multithreaded ones. It is built with performance, pragmatism, and simplicity in mind. Like most general purpose languages, various Clojure features have different performance characteristics that one should know in order to write high performance code. This book shows you how to evaluate the performance implications of various Clojure abstractions, discover their underpinnings, and apply the right approach for optimum performance in real-world programs. It starts by helping you classify various use cases and the need for them with respect to performance and analysis of various performance aspects. You will also learn the performance vocabulary that experts use throughout the world and discover various Clojure data structures, abstractions, and their performance characteristics. Further, the book will guide you through enhancing performance by using Java interoperability and JVM-specific features from Clojure. It also highlights the importance of using the right concurrent data structure and Java concurrency abstractions. This book also sheds light on performance metrics for measuring, how to measure, and how to visualize and monitor the collected data. At the end of the book, you will learn to run a performance profiler,

identify bottlenecks, tune performance, and refactor code to get a better performance. Style and approach An easy-to-follow guide full of real-world examples and self-sufficient code snippets that will help you get your hands dirty with high performance programming with Clojure.

Explore the latest Java-based software development techniques and methodologies through the project-based approach in this practical guide. Unlike books that use abstract examples and lots of theory, Real-World Software Development shows you how to develop several relevant projects while learning best practices along the way. With this engaging approach, junior developers capable of writing basic Java code will learn about state-of-the-art software development practices for building modern, robust and maintainable Java software. You'll work with many different software development topics that are often excluded from software develop how-to references. Featuring real-world examples, this book teaches you techniques and methodologies for functional programming, automated testing, security, architecture, and distributed systems.

High-Performance Java Persistence

Troubleshooting Java Performance

A Quantitative Approach

Accelerating MATLAB Performance

Secure Electronic Commerce

Coding and testing are generally considered separate areas of expertise. In this practical book, Java expert Scott Oaks takes the approach that anyone who works with Java should be adept at understanding how code behaves in the Java Virtual Machine—including the tunings likely to help performance. This updated second edition helps you gain in-depth knowledge of Java application performance using both the JVM and the Java platform. Developers and performance engineers alike will learn a variety of features, tools, and processes for improving the way the Java 8 and 11 LTS releases perform. While the emphasis is on production-supported releases and features, this book also features previews of exciting new technologies such as ahead-of-time compilation and experimental garbage collections. Understand how various Java platforms and compilers affect performance Learn how Java garbage collection works Apply four principles to obtain best results from performance testing Use the JDK and other tools to learn how a Java application is performing Minimize the garbage collector's impact through tuning and programming practices Tackle performance issues in Java APIs Improve Java-driven database application performance When your database application isn't running fast enough,

troubleshooting is usually your first move. Finding the slow part of an application is often easy, but discovering a solution can prove much more difficult. Troubleshooting Oracle Performance helps by providing a systematic approach to addressing the underlying causes of poor database application performance. Written for developers by an application developer who has learned by doing, this book shows you how to plan for performance as you would for any other application requirement.

First book to address and assess performance of enterprise Java-based applications using the new Java EE 5 Presents Java EE 5 Performance Management as a proven methodology, featuring a set of common problems that have been observed in real-world customer environments Presents "wait-based" performance tuning methodology, the most efficient Java EE 5 tuning methodology, but one previously neglected in the Java EE 5 space

Coding and testing are generally considered separate areas of expertise. In this practical book, Java expert Scott Oaks takes the approach that anyone who works with Java should be equally adept at understanding how code behaves in the Java Virtual Machine—including the tunings likely to help performance. This updated second edition helps you gain in-depth knowledge of Java application performance using both the JVM and the Java platform. Developers and performance engineers alike will learn a variety of features, tools, and processes for improving the way Java 8 and 11 LTS releases perform. While the emphasis is on production-supported releases and features, this book also features previews of exciting new technologies such as ahead-of-time compilation and experimental garbage collections. Understand how various Java platforms and compilers affect performance Learn how Java garbage collection works Apply four principles to obtain best results from performance testing Use the JDK and other tools to learn how a Java application is performing Minimize the garbage collector's impact through tuning and programming practices Tackle performance issues in Java EE and SE APIs Improve Java-driven database application performance.

Java Threads

POWER7 and POWER7+ Optimization and Tuning Guide

Pro Java EE 5 Performance Management and Optimization

1001 tips to speed up MATLAB programs

Clojure High Performance Programming Real-World Software Development

Build faster, more efficient enterprise Java applications.

Performance tuning is an experimental science, but that doesn't mean engineers should resort to guesswork and folklore to get the job done. Yet that's often the case. With this practical book, intermediate to advanced Java technologists working with complex technology stacks will learn how to tune Java applications for performance using a quantitative, verifiable approach. Most resources on performance tend to discuss the theory and internals of Java virtual machines, but this book focuses on the practicalities of performance tuning by examining a wide range of aspects. There are no simple recipes, tips and tricks, or algorithms to learn. Performance tuning is a process of defining and determining desired outcomes. And it requires diligence. Learn how Java principles and technology make the best use of modern hardware and operating systems Explore several performance tests and common anti-patterns that can vex your team Understand the pitfalls of measuring Java performance numbers and the drawbacks of microbenchmarking Dive into JVM garbage collection logging, monitoring, tuning, and tools Explore JIT compilation and Java language performance techniques Learn performance aspects of the Java Collections API and get an overview of Java concurrency

Java® Performance Companion shows how to systematically and proactively improve Java performance with today's advanced multicore hardware and complex operating system environments. The authors, who are all leading Java performance and Java HotSpot VM experts, help you improve performance by using modern software engineering practices, avoiding common mistakes, and applying tips and tricks gleaned from years of real-world experience. Picking up where Charlie Hunt and Binu John's classic Java Performance left off, this book provides unprecedented detail on two powerful Java platform innovations: the Garbage First (G1) garbage collector and the HotSpot VM Serviceability Agent. Coverage includes Leveraging G1 to overcome limitations in parallel, serial, and CMS garbage collection Understanding each stage of G1 GC collections, both young and old Getting under the hood with G1 and efficiently fine-tuning it for your application Identifying potential optimizations, interpreting experimental results, and taking action Exploring the internals of the HotSpot VM Using HotSpot VM Serviceability Agent to analyze, triage, and resolve diverse HotSpot VM issues Troubleshooting out of memory errors, Java level deadlocks, and HotSpot VM crashes Extending the Serviceability Agent, and using the Plugin for VisualVM Mastering useful HotSpot VM command line options not covered in Java® Performance Java® Performance Companion can help you squeeze maximum performance and value from Java with JDK 8 or 9 for any application, in any environment. Register your product at informit.com/register for convenient access to downloads, updates, and corrections as they become available. Summary Building on the bestselling first edition, EJB 3 in Action, Second Edition

tackles EJB 3.2 head-on, through numerous code samples, real-life scenarios, and illustrations. This book is a fast-paced tutorial for Java EE 6 business component development using EJB 3.2, JPA 2, and CDI. Besides covering the basics of EJB 3.2, this book includes in-depth EJB 3.2 internal implementation details, best practices, design patterns, and performance tuning tips. Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. About the Book The EJB 3 framework provides a standard way to capture business logic in manageable server-side modules, making it easier to write, maintain, and extend Java EE applications. EJB 3.2 provides more enhancements and intelligent defaults and integrates more fully with other Java technologies, such as CDI, to make development even easier. EJB 3 in Action, Second Edition is a fast-paced tutorial for Java EE business component developers using EJB 3.2, JPA, and CDI. It tackles EJB head-on through numerous code samples, real-life scenarios, and illustrations. Beyond the basics, this book includes internal implementation details, best practices, design patterns, performance tuning tips, and various means of access including Web Services, REST Services, and WebSockets. Readers need to know Java. No prior experience with EJB or Java EE is assumed. What's Inside Fully revised for EJB 3.2 POJO persistence with JPA 2.1 Dependency injection and bean management with CDI 1.1 Interactive application with WebSocket 1.0 About the Authors Debu Panda, Reza Rahman, Ryan Cuprak, and Michael Remijan are seasoned Java architects, developers, authors, and community leaders. Debu and Reza coauthored the first edition of EJB 3 in Action. Table of Contents PART 1 OVERVIEW OF THE EJB LANDSCAPE What's what in EJB 3 A first taste of EJB PART 2 WORKING WITH EJB COMPONENTS Building business logic with session beans Messaging and developing MDBs EJB runtime context, dependency injection, and crosscutting logic Transactions and security Scheduling and timers Exposing EJBs as web services PART 3 USING EJB WITH JPA AND CDI JPA entities Managing entities JPQL Using CDI with EJB 3 PART 4 PUTTING EJB INTO ACTION Packaging EJB 3 applications Using WebSockets with EJB 3 Testing and EJB

Java Performance

In-Depth Advice for Tuning and Programming Java 8, 11, and Beyond

Java Performance, 2nd Edition

Java 9 Concurrency Cookbook

Java Performance Companion

JBoss AS 5 Performance Tuning

The ONLY complete, up-to-date guide to all aspects of Java performance • •The first one-stop guide to identifying, isolating, and fixing Java performance issues on multicore and multiprocessor processor platforms - from two of Sun's leading Java performance experts. •Includes crucial new insights into microbenchmarking found nowhere else. •Contains up-to-the-minute coverage of Java optimization, including migration of older applications. Given Java's

ubiquity and indispensability, Java software performance is of crucial importance to millions of developers worldwide. The emergence of multi-core systems and the evolution of the Java platform give developers many new opportunities to optimize performance. Now, three of Sun's leading Java performance experts have written the first start-to-finish guide to optimizing Java performance in today's multi-core systems. Java Performance gives developers, designers, and architects all the information they need to leverage Java's performance and scalability abilities on any modern multicore or multiprocessor system. This book's end-to-end coverage addresses all these topics: monitoring and profiling; the effective use of garbage collection and other language features; adaptive and platform-specific tuning; techniques for maximizing scalability; and much more. The authors' extensive benchmarking coverage includes an indispensable introduction to effective microbenchmarks - including guidance on avoiding the common microbenchmarking mistakes that mislead developers into writing badlyperforming software. The book also contains a complete section on Java performance enhancement, including opportunities and challenges associated with migrating software from Java 1.4.2 and Java 5 - issues that more and more Java developers are now facing.

When you use Hibernate in your projects, you quickly recognize that you need to do more than just add @Entity annotations to your domain model classes. Real-world applications often require advanced mappings, complex queries, custom data types and caching. Hibernate can do all of that. You just have to know which annotations and APIs you need to use. *Hibernate Tips - More than 70 solutions to common Hibernate problems* shows you how to efficiently implement your persistence layer with Hibernate's basic and advanced features. Each Hibernate Tip consists of one or more code samples and an easy to follow step-by-step explanation. You can also download an example project with executable test cases for each Hibernate Tip. Throughout this book, you will get more than 70 ready-to-use solutions that show you how to:

- Define standard mappings for basic attributes and entity associations.
- Implement your own attribute mappings and support custom data types.
- Use Hibernate's Java 8 support and other proprietary features.
- Read data from the database with JPQL, Criteria API, and native SQL queries.
- Call stored procedures and database functions.

This book is for developers who are already working with Hibernate and who are looking for solutions for their current development tasks. It's not a book for beginners who are looking for extensive descriptions of Hibernate's general concepts. The tips are designed as self-contained recipes which provide a specific solution and can be accessed when needed. Most of them contain links to related tips which you can follow if you want to dive deeper into a topic or need a slightly different solution. There is no need to read the tips in a specific order. Feel free to read the book from cover to cover or to just pick the tips that help you in your current project.

Drawing on the authors knowledge of the Java programming language and their extensive experience working on performance issues, the book reveals common mistakes and misconceptions concerning the performance characteristics of Java technologies. It offers overall development strategies and concrete, battle-

tested techniques to dramatically improve the performance of applications constructed with the Java programming language. Java Platform Performance highlights the importance of integrating performance evaluation into the application development process and discusses measurement techniques. The book then presents practical tactics for enhancing application performance in the areas of I/O, RAM footprint, small object management, algorithms, data structures, Swing, and deployment. Specific topics covered include:

- *Incorporating performance evaluation into the development process
- *Profiling and benchmarking
- *Building scalable, fast Swing GUIs
- *Using high-speed I/O
- *Computing and controlling the RAM footprint
- *Reducing the number of classes
- *Eliminating temporary objects
- *Selecting high-performance algorithms and data structures
- *Using Java native code and applet packaging efficiently

"Newcomers will appreciate the clear explanations of the origins and development of secure e-commerce. More experienced developers can move straight to the detailed technical material. Anyone who is involved in e-commerce design, management, or operation will benefit from Secure Electronic Commerce."--BOOK JACKET.

Java Platform Performance

Building the Infrastructure for Digital Signatures and Encryption

Java 2 Performance and Idiom Guide

Java Performance and Scalability: Server-side programming techniques

Practical Techniques for Improving JVM Application Performance

A Project-Driven Guide to Fundamentals in Java

Summary Mule in Action, Second Edition is a totally-revised guide covering Mule 3 fundamentals and best practices. It starts with a quick ESB overview and then dives into rich examples covering core concepts like sending, receiving, routing, and transforming data. About the Technology An enterprise service bus is a way to integrate enterprise applications using a bus-like infrastructure. Mule is the leading open source Java ESB. It borrows from the Hohpe/Woolf patterns, is lightweight, can publish REST and SOAP services, integrates well with Spring, is customizable, scales well, and is cloud-ready. About the Book Mule in Action, Second Edition is a totally revised guide covering Mule 3 fundamentals and best practices. It starts with a quick ESB overview and then dives into rich examples covering core concepts like sending, receiving, routing, and transforming data. You'll get a close look at Mule's standard components and how to roll out custom ones. You'll also pick up techniques for testing, performance tuning, and BPM orchestration, and explore cloud API integration for SaaS applications. Written for developers, architects, and IT managers, this book requires familiarity with Java but no

previous exposure to Mule or other ESBs. Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. What's Inside Full coverage of Mule 3 Integration with cloud services Common transports, routers, and transformers Security, routing, orchestration, and transactions About the Authors David Dossot is a software architect and has created numerous modules and transports for Mule. John D'Emic is a principal solutions architect and Victor Romero a solutions architect, both at MuleSoft, Inc. Table of Contents PART 1 CORE MULE Discovering Mule Processing messages with Mule Working with connectors Transforming data with Mule Routing data with Mule Working with components and patterns PART 2 RUNNING MULE Integration architecture with Mule Deploying Mule Exception handling and transaction management with Mule Securing Mule Tuning Mule PART 3 TRAVELING FURTHER WITH MULE Developing with Mule Writing custom cloud connectors and processors Augmenting Mule with orthogonal technologies Master the art of fast, effective Java development with the power of concurrent and parallel programming About This Book Get detailed coverage of important recipes on multi-threading and parallel programming This book takes a close look at the Java 9 APIs and their impact on concurrency See practical examples on thread safety, high-performance classes, safe sharing, and a whole lot more Who This Book Is For The book is for Java developers and programmers at an intermediate to advanced level. It will be especially useful for developers who want to take advantage of task-based recipes using Java 9's concurrent API to program thread-safe solutions. What You Will Learn Find out to manage the basic components of the Java Concurrency API Use synchronization mechanisms to avoid data race conditions and other problems of concurrent applications Separate the thread management from the rest of the application with the Executor framework Solve problems using a parallelized version of the divide and conquer paradigm with the Fork / Join framework Process massive data sets in an optimized way using streams and reactive streams See which data structures we can use in concurrent applications and how to use them Practice efficient techniques to test concurrent applications Get to know tips and tricks to design concurrent applications In Detail Writing concurrent and parallel programming applications is an integral skill for any Java programmer.

Java 9 comes with a host of fantastic features, including significant performance improvements and new APIs. This book will take you through all the new APIs, showing you how to build parallel and multi-threaded applications. The book covers all the elements of the Java Concurrency API, with essential recipes that will help you take advantage of the exciting new capabilities. You will learn how to use parallel and reactive streams to process massive data sets. Next, you will move on to create streams and use all their intermediate and terminal operations to process big collections of data in a parallel and functional way. Further, you'll discover a whole range of recipes for almost everything, such as thread management, synchronization, executors, parallel and reactive streams, and many more. At the end of the book, you will learn how to obtain information about the status of some of the most useful components of the Java Concurrency API and how to test concurrent applications using different tools. Style and approach This recipe-based book will allow you to explore the exciting capabilities of concurrency in Java. After reading this book, you will be able to comfortably build parallel applications in Java 9.

PLEASE PROVIDE DESCRIPTION

This IBM® Redbooks® publication provides performance tuning tips and best practices for IBM Business Process Manager (IBM BPM) V8.5.5 (all editions) and IBM Business Monitor V8.5.5. These products represent an integrated development and runtime environment based on a key set of service-oriented architecture (SOA) and business process management (BPM) technologies. Such technologies include Service Component Architecture (SCA), Service Data Object (SDO), Business Process Execution Language (BPEL) for web services, and Business Processing Modeling Notation (BPMN). Both IBM Business Process Manager and Business Monitor build on the core capabilities of the IBM WebSphere® Application Server infrastructure. As a result, Business Process Manager solutions benefit from tuning, configuration, and best practices information for WebSphere Application Server and the corresponding platform Java virtual machines (JVMs). This book targets a wide variety of groups, both within IBM (development, services, technical sales, and others) and customers. For customers who are either considering or are in the early stages of implementing a solution incorporating

Business Process Manager and Business Monitor, this document proves a useful reference. The book is useful both in terms of best practices during application development and deployment and as a reference for setup, tuning, and configuration information. This book talks about many issues that can influence performance of each product and can serve as a guide for making rational first choices in terms of configuration and performance settings. Similarly, customers who already implemented a solution with these products can use the information presented here to gain insight into how their overall integrated solution performance can be improved.

The Well-Founded Java Developer

Java Performance and Scalability

SQL Performance Tuning

Taking you to the limit in Concurrency, OOP, and the most advanced capabilities of C

Java Performance: The Definitive Guide

Java and the Internet

Packed with practical examples, this book looks at a different aspect of performance tuning in each chapter and shows you how to apply them to their existing Java applications. Anyone with an interest in learning more and improving the performance of Java-based technology in general, all the way to WildFly in particular, will find this book useful.

Troubleshoot the most widespread and pernicious Java performance problems using a set of open-source and freely-available tools that will make you dramatically more productive in finding the root causes of slow performance. This is a brief book that focuses on a small number of performance anti-patterns, and you'll find that most problems you encounter fit into one of these anti-patterns. The book provides a specific method in a series of steps referred to as the "P.A.t.h. Checklist" that encompasses persistence, alien systems, threads, and heap management. These steps guide you through a troubleshooting process that is repeatable, that you can apply to any performance problem in a Java application. This technique is especially helpful in 'dark' environments with little monitoring. Performance problems are not always localized to Java, but often fall into the realms of database access and server load. This book gives attention to both of these issues through examples showing how to identify repetitive SQL, and identify architecture-wide performance problems ahead of production rollout. Learn how to apply load like an expert, and determine how much load to apply to determine whether your system scales. Included are walk-throughs of a dozen server-side performance puzzles that are ready to run on your own machine. Following these examples helps you learn to: Assess the performance health of four main problems areas in a Java system: The P.A.t.h. Checklist presents each area with its own set of plug-it-in-now tools Pinpoint the code at fault for CPU and other bottlenecks without a Java profiler Find memory leaks in just minutes using heapSpank, the author's open-source leak detector utility that is freely available from heapSpank.org The repeatable method provided in this book is an antidote

to lackluster average response times that are multi-second throughout the industry. This book provides a long absent, easy-to-follow, performance training regimen that will benefit anyone programming in Java. What You'll Learn Avoid the 6 most common ways to mess up a load test Determine the exact number of threads to dial into the load generator to test your system's scalability Detect the three most common SQL performance anti-patterns Measure network response times of calls to back-end systems ('alien systems') Identify whether garbage collection performance is healthy or unhealthy and whether delays are caused by problems in the old or new generation, so you know which generation needs to be adjusted Who This Book Is For Intermediate and expert Java developers and architects. Java experts will be able to update their skill set with the latest and most productive, open-source Java performance tools. Intermediate Java developers are exposed to the most common performance defects that repeatedly show up in Java applications, ones that account for the bulk of slow-performing systems. Experts and intermediates alike will benefit from the chapters on load generation.

Software -- Programming Languages.

Jakarta Tomcat is not only the most commonly used open source servlet engine today, it's become the de facto standard by which other servlet engines are measured. Powerful and flexible, it can be used as a stand-alone web server or in conjunction with another server, like Apache or IIS, to run servlets or JSPs. But mastery of Tomcat is not easy: because it's as complex as it is complete. Tomcat: The Definitive Guide answers vexing questions that users, administrators, and developers alike have been asking. This concise guide provides much needed information to help harness Tomcat's power and wealth of features. Tomcat: The Definitive Guide offers something for everyone who uses Tomcat. System and network administrators will find detailed instructions on installation, configuration, and maintenance. For users, it supplies insightful information on how to deploy Tomcat. And seasoned enterprise Java developers will have a complete reference to setting up, running, and using this powerful software. The book begins with an introduction to the Tomcat server and includes an overview of the three types of server configurations: stand-alone, in-process, and out-of-process. The authors show how directories are laid out, cover the initial setup, and describe how to set the environment variables and modify the configuration files, concluding with common errors, problems, and solutions. In subsequent chapters, they cover: The server.xml configuration file Java Security manager Authentication schemes and Tomcat users The Secure Socket Layer (SSL) Tomcat JDBC Realms Installing servlets and Java Server Pages Integrating Tomcat with Apache Advanced Tomcat configuration and much more. Tomcat: The Definitive Guide covers all major platforms, including Windows, Solaris, Linux, and Mac OS X, contains details on Tomcat configuration files, and has a quick-start guide to get developers up and running with Java servlets and JavaServer Pages. If you've struggled with this powerful yet demanding technology in the past, this book will provide the answers you need.

Troubleshooting Oracle Performance

Lucene in Action

Java Performance Tuning

Speeding Up the Web

Data Structures and Algorithms in Java

Tomcat: The Definitive Guide

The MATLAB® programming environment is often perceived as a platform suitable for prototyping and modeling but not for "serious" applications. One of the main complaints is that MATLAB is just too slow. Accelerating MATLAB Performance aims to correct this perception by describing multiple ways to greatly improve MATLAB program speed. Packed with thousands of helpful tips, it leaves no stone unturned, discussing every aspect of MATLAB. Ideal for novices and professionals alike, the book describes MATLAB performance in a scale and depth never before published. It takes a comprehensive approach to MATLAB performance, illustrating numerous ways to attain the desired speedup. The book covers MATLAB, CPU, and memory profiling and discusses various tradeoffs in performance tuning. It describes both the application of standard industry techniques in MATLAB, as well as methods that are specific to MATLAB such as using different data types or built-in functions. The book covers MATLAB vectorization, parallelization (implicit and explicit), optimization, memory management, chunking, and caching. It explains MATLAB's memory model and details how it can be leveraged. It describes the use of GPU, MEX, FPGA, and other forms of compiled code, as well as techniques for speeding up deployed applications. It details specific tips for MATLAB GUI, graphics, and I/O. It also reviews a wide variety of utilities, libraries, and toolboxes that can help to improve performance. Sufficient information is provided to allow readers to immediately apply the suggestions to their own MATLAB programs. Extensive references are also included to allow those who wish to expand the treatment of a particular topic to do so easily. Supported by an active website, and numerous code examples, the book will help readers rapidly attain significant reductions in development costs and program run times.

Java Performance Tuning"O'Reilly Media, Inc."

This IBM® Redbooks® publication provides advice and technical information about optimizing and tuning application code to run on systems that are based on the IBM POWER7® and POWER7+™ processors. This advice is drawn from application optimization efforts across many different types of code that runs under the IBM AIX® and Linux operating systems, focusing on the more pervasive performance opportunities that are identified, and how to capitalize on them. The technical information was developed by a set of domain experts at IBM. The focus of this book is to gather the right technical information, and lay out simple guidance for optimizing code performance on the IBM POWER7 and POWER7+ systems that run the AIX or Linux operating systems. This book contains a large amount of straightforward performance optimization that can be performed with minimal effort and without previous experience or in-depth knowledge. This optimization work can: Improve the

performance of the application that is being optimized for the POWER7 system Carry over improvements to systems that are based on related processor chips Improve performance on other platforms The audience of this book is those personnel who are responsible for performing migration and implementation activities on IBM POWER7-based servers, which includes system administrators, system architects, network administrators, information architects, and database administrators (DBAs). Understanding Java from the JVM up gives you a solid foundation to grow your expertise and take on advanced techniques for performance, concurrency, containerization, and more. The Well-Founded Java Developer, Second Edition is a complete revision of the classic original with the latest innovations of the Java platform. It upgrades your existing Java skills with both JVM fundamentals like bytecode, and powerful new features such as modules and concurrency models. You'll broaden your understanding of what's possible by exploring Kotlin and other JVM languages, and learn how functional programming can offer a powerful new perspective. Each concept is illustrated with hands-on examples, including a fully modularized application/library, build setups for Maven and Gradle, and creating your own multithreaded application. Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications.

Virtualizing and Tuning Large Scale Java Platforms

Hibernate Tips

Squeeze the Last Bit of Performance from Your Application.

EJB 3 in Action

More than 70 solutions to common Hibernate problems

The Well-Founded Java Developer, Second Edition

Performance tuning is becoming more important than it has been for the last 40 years. Read this book to understand your application's performance that runs on a modern CPU and learn how you can improve it. The 170+ page guide combines the knowledge of many optimization experts from different industries. Summary The Well-Founded Java Developer offers a fresh and practical look at new Java 7 features, new JVM languages, and the array of supporting technologies you need for the next generation of Java-based software. About the Book The Well-Founded Java Developer starts with thorough coverage of Java 7 features like try-with-resources and NIO.2. You'll then explore a cross-section of emerging JVM-based languages, including Groovy, Scala, and Clojure. You will find clear examples that are practical and that help you dig into dozens of valuable development techniques showcasing modern approaches to the dev process, concurrency, performance, and much more. Written for readers familiar with Java. No experience with Java 7 or new JVM languages required. Purchase of the print book comes with an offer of a free PDF, ePub, and Kindle eBook from Manning. Also available is all code from the book. What's Inside New Java 7 features Tutorials on Groovy, Scala, and Clojure Discovering multicore processing and concurrency Functional programming with new JVM languages Modern approaches to testing, build, and CI Table of Contents PART 1 DEVELOPING WITH JAVA 7 Introducing Java 7 New I/O PART 2 VITAL TECHNIQUES Dependency Injection Modern concurrency Class files and bytecode Understanding performance tuning PART 3 POLYGLOT PROGRAMMING ON THE JVM Alternative JVM languages Groovy: Java's dynamic friend Scala: powerful and concise Clojure: safer programming PART 4 CRAFTING THE POLYGLOT PROJECT Test-driven development Build and continuous

integration Rapid web development Staying well-grounded

Coding and testing are often considered separate areas of expertise. In this comprehensive guide, author and Java expert Scott Oaks takes the approach that anyone who works with Java should be equally adept at understanding how code behaves in the JVM, as well as the tunings likely to help its performance.

You'll gain in-depth knowledge of Java application performance, using the Java Virtual Machine (JVM) and the Java platform, including the language and API. Developers and performance engineers alike will learn a variety of features, tools, and processes for improving the way Java 7 and 8 applications perform. Apply four principles for obtaining the best results from performance testing Use JDK tools to collect data on how a Java application is performing Understand the advantages and disadvantages of using a JIT compiler Tune JVM garbage collectors to affect programs as little as possible Use techniques to manage heap memory and JVM native memory Maximize Java threading and synchronization performance features Tackle performance issues in Java EE and Java SE APIs Improve Java-driven database application performance

Helps readers eliminate performance problems, covering topics including bottlenecks, profiling tools, strings, algorithms, distributed systems, and servlets.

Optimizing Java

IBM Business Process Manager V8.5 Performance Tuning and Best Practices

Sun Performance and Tuning

Performance Analysis and Tuning on Modern CPUs

Getting the Most Out of Your Code

SAP Performance Optimization Guide

Push the limits of what C - and you - can do, with this high-intensity guide to the most advanced capabilities of C Key FeaturesMake the most of C's low-level control, flexibility, and high performanceA comprehensive guide to C's most powerful and challenging featuresA thought-provoking guide packed with hands-on exercises and examplesBook Description There's a lot more to C than knowing the language syntax. The industry looks for developers with a rigorous, scientific understanding of the principles and practices. Extreme C will teach you to use C's advanced low-level power to write effective, efficient systems. This intensive, practical guide will help you become an expert C programmer. Building on your existing C knowledge, you will master preprocessor directives, macros, conditional compilation, pointers, and much more. You will gain new insight into algorithm design, functions, and structures. You will discover how C helps you squeeze maximum performance out of critical, resource-constrained applications. C still plays a critical role in 21st-century programming, remaining the core language for precision engineering, aviations, space research, and more. This book shows how C works with Unix, how to implement OO principles in C, and fully covers multi-processing. In Extreme C, Amini encourages you to think, question, apply, and experiment for yourself. The book is essential for anybody who wants to take their C to the next level. What you will learnBuild advanced C knowledge on strong foundations, rooted in first principlesUnderstand memory structures and compilation pipeline and how they work, and how to make most out of themApply object-oriented design principles to your procedural C codeWrite low-level code that's close to the hardware and

squeezes maximum performance out of a computer system
Master concurrency, multithreading, multi-processing, and integration with other languages
Unit Testing and debugging, build systems, and inter-process communication for C programming
Who this book is for Extreme C is for C programmers who want to dig deep into the language and its capabilities. It will help you make the most of the low-level control C gives you.

Explains how to use Java's portable platforms to program and use threads effectively and efficiently while avoiding common mistakes

The design and analysis of efficient data structures has long been recognized as a key component of the Computer Science curriculum.

Goodrich, Tomassia and Goldwasser's approach to this classic topic is based on the object-oriented paradigm as the framework of choice for the design of data structures. For each ADT presented in the text, the authors provide an associated Java interface. Concrete data structures realizing the ADTs are provided as Java classes implementing the interfaces. The Java code implementing fundamental data structures in this book is organized in a single Java package, net.datastructures. This package forms a coherent library of data structures and algorithms in Java specifically designed for educational purposes in a way that is complimentary with the Java Collections Framework.

Offers tips for improving the performance of any SQL database, no matter what the platform. Written for experienced database administrators familiar with SQL, the book identifies the similarities and differences of eight DBMSs, including Oracle 9i, IBM DB2 7.2, and Microsoft SQL server 2000. It provides strategies for refining sorts, subqueries, columns, tables, indexes, constraints, and locks. Annotation copyrighted by Book News, Inc., Portland, OR

Web Performance Tuning

Extreme C

Detecting Anti-Patterns with Open Source Tools