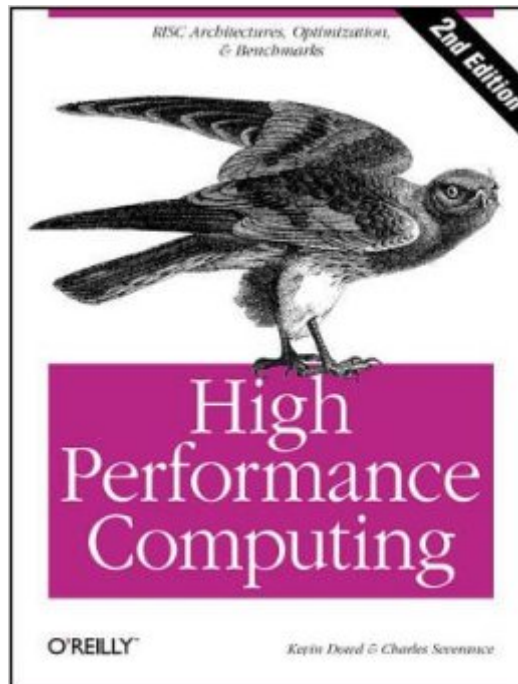# High Performance Computing (RISC Architectures, Optimization & Benchmarks)

Synopsis

This book is a "must" for anyone who needs to worry about computer performance, either as a software developer or as a buyer. But it also provides valuable insights for those among us who do relatively little programming and run mostly third-party application software. Even if you never touch a line of code, High Performance Computing will give you a feel for how the most recent generation of computer hardware works. If you work with computers, you owe it to yourself to understand the new directions that workstation architecture has taken in the last half decade, including RISC-based workstation architectures like DEC Alpha/AXP, the IBM RS/6000 and the HP 9000/700 series.This book covers everything, from the basics of modern workstation architecture, to structuring benchmarks, to squeezing more performance out of critical applications. It also explains how optimizing compilers work: it discusses what a good compiler can do for you and, more important, what you have to do yourself. The author also discusses techniques for improving memory access patterns and taking advantage of parallelism. The book closes with a look at the high-performance future: parallel computers, including exotic distributed memory multiprocessors, and the more "garden-variety" shared memory processors that are already appearing on people's desktops.High Performance Computing pays special attention to memory issues; perhaps the most important story in high performance computing (and one you're not likely to be told by vendors) is the increasing disparity between CPU speeds and memory speeds.Another valuable section of the book discusses the benchmarking process: how to evaluate a computer's performance. Kevin Dowd discusses several of the "standard" industry benchmarks, explaining what they measure and what they don't. He also explains how to set up your own benchmark: how to structure the code, how to measure the results, and how to interpret them.

Book Information

Series: RISC Architectures, Optimization & Benchmarks

Paperback: 398 pages

Publisher: O'Reilly Media; 1 edition (June 11, 1993)

Language: English

ISBN-10: 1565920325

ISBN-13: 978-1565920323

Product Dimensions: 6 x 0.9 x 9 inches

Shipping Weight: 1.2 pounds

Average Customer Review: 5.0 out of 5 starsÂ Â See all reviewsÂ (4 customer reviews)

Best Sellers Rank: #908,713 in Books (See Top 100 in Books)   #31 inÂ Books > Computers & Technology > Programming > Software Design, Testing & Engineering > Performance Optimization   #145 inÂ Books > Computers & Technology > Hardware & DIY > Microprocessors & System Design > Computer Design   #459 inÂ Books > Computers & Technology > Hardware & DIY > Design & Architecture

Customer Reviews

Materials covered in certain chapters are equivalent to a one semester class at MIT.. though in less detail, the lucid explanation of the fundamental concepts are impressive.. this book is a very good start for someone who has never touched the subject of Parallel Computing before.

This book provides great insight into the _performance_ of hardware. How can one be a good programmer without knowing how it is that data gets to memory, how data flows through the CPU and what it is in the hardware that makes ones code fast or slow? It amazes me that most of the developers that I work with are ignorant or could not care less about the effects of cache misses, what superscalar/superpipelined really means, and how a "improper" stride through their array can make the performance of their code deplorable. This book makes for a great read and is guaranteed to make a programmer a better programmer.

Explains very nicely and precisely the HW fundamentals of the multiprocessors, memory, RISC, insights in software and optimization concepts like register stacks and nested loops. Very much useful for not to get confused by the buzzwords in the super computer industry. Good book for both the engineers and managers of hardware companies. It is simple and non intrusive read. If you are new engineer in processor design or compiler architecture jobs, this book gives lot of insight and learning needed for your job. However this book is not a bible on computer architecture like Hennessy's books.

It is an excellent book I have read. It includes the latest state of art IA-64 architure, RISC, compiler ...

Download to continue reading...

High Performance Computing (RISC Architectures, Optimization & Benchmarks) Software Optimization for High Performance Computing: Creating Faster Applications Hybrid Particle Swarm Algorithm for Multiobjective Optimization: Integrating Particle Swarm Optimization with Genetic

Algorithms for Multiobjective Optimization Phase-Locking in High-Performance Systems: From Devices to Architectures Guide to Web Application and Platform Architectures (Springer Professional Computing) Raspberry Pi Assembly Language RISC OS Beginners (Hands On Guide) Network Performance and Optimization Guide: The Essential Network Performance Guide For CCNA, CCNP and CCIE Engineers (Design Series) High Performance MySQL: Optimization, Backups, and Replication High Performance MySQL: Optimization, Backups, Replication, and More The Software Optimization Cookbook: High Performance Recipes for IA-32 Platforms, 2nd Edition Software Optimization Cookbook: High-Performance Recipes for the Intel Architecture CUDA for Engineers: An Introduction to High-Performance Parallel Computing Seo 2017: Search Engine Optimization for 2017. On Page SEO, Off Page SEO, Keywords (SEO Books, Search Engine Optimization 2016) SEO 2017: Search Engine Optimization for 2017. On Page SEO, Off Page SEO, Keywords (SEO Books, Search Engine Optimization 2017) WordPress: A Beginner to Intermediate Guide on Successful Blogging and Search Engine Optimization. (Blogging, SEO, Search Engine Optimization, Free Website, WordPress, WordPress for Dummies) SEO+Clickbank (Search Engine Optimization 2016): Use The Power of Search Engine Optimization 2016+ Clickbank Introduction to Evolutionary Computing (Natural Computing Series) CUDA Programming: A Developer's Guide to Parallel Computing with GPUs (Applications of Gpu Computing) Strategic Computing: DARPA and the Quest for Machine Intelligence, 1983-1993 (History of Computing) Dependable Computing for Critical Applications 5 (Dependable Computing and Fault-Tolerant Systems)