1. Record Nr. UNINA9910484504303321

Titolo	High Performance Computing for Computational Science - VECPAR 2004 : 6th International Conference, Valencia, Spain, June 28-30, 2004, Revised Selected and Invited Papers / / edited by Michel Daydé, Jack Dongarra, Vincente Hernández, José M.L.M. Palma
Pubbl/distr/stampa	Berlin, Heidelberg : , : Springer Berlin Heidelberg : , : Imprint : Springer, , 2005
Edizione	[1st ed. 2005.]
Descrizione fisica	1 online resource (XI, 732 p.)
Collana	Theoretical Computer Science and General Issues, , 2512-2029 ; ; 3402
Disciplina	004.1
Soggetti	Microprocessors Computer architecture Software engineering Computer science Computer networks Computer science—Mathematics Processor Architectures Software Engineering Theory of Computation Computer Communication Networks Mathematics of Computing
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	1: Large Scale Computations -- Large Scale Simulations -- Development and Integration of Parallel Multidisciplinary Computational Software for Modeling a Modern Manufacturing Process -- Automatically Tuned FFTs for BlueGene/L’s Double FPU -- A Survey of High-Quality Computational Libraries and Their Impact in Science and Engineering Applications -- A Performance Evaluation of the Cray X1 for Scientific Applications -- Modelling Overhead of Tuple Spaces with Design of Experiments -- Analysis of the Interaction of Electromagnetic Signals with Thin-Wires Structures. Multiprocessing Issues for an Iterative Method -- A Performance Prediction Model for

Tomographic Reconstruction in Structural Biology -- 2: Data Management and Data Mining -- Data Management in Large-Scale P2P Systems -- A High Performance System for Processing Queries on Distributed Geospatial Data Sets -- Parallel Implementation of Information Retrieval Clustering Models -- Distributed Processing of Large BioMedical 3D Images -- Developing Distributed Data Mining Applications in the Knowledge Grid Framework -- Scaling Up the Preventive Replication of Autonomous Databases in Cluster Systems -- Parallel Implementation of a Fuzzy Rule Based Classifier -- 3: Grid Computing Infrastructure -- The EGEE European Grid Infrastructure Project -- Grid Technology for Biomedical Applications -- Three-Dimensional Cardiac Electrical Activity Simulation on Cluster and Grid Platforms -- 2DRMP-G: Migrating a Large-Scale Numerical Mathematical Application to a Grid Environment -- Design of an OGSA-Compliant Grid Information Service Using .NET Technologies -- A Web-Based Application Service Provision Architecture for Enabling High-Performance Image Processing -- Influence of Grid Economic Factors on Scheduling and Migration -- Extended Membership Problem for Open Groups: Specification and Solution -- Asynchronous Iterative Algorithms for Computational Science on the Grid: Three Case Studies -- Security Mechanism for Medical Image Information on PACS Using Invisible Watermark -- 4: Cluster Computing -- Parallel Generalized Finite Element Method for Magnetic Multiparticle Problems -- Parallel Model Reduction of Large Linear Descriptor Systems via Balanced Truncation -- A Parallel Algorithm for Automatic Particle Identification in Electron Micrographs -- Parallel Resolution of the Two-Group Time Dependent Neutron Diffusion Equation with Public Domain ODE Codes -- FPGA Implementations of the RNR Cellular Automata to Model Electrostatic Field -- PerWiz: A What-If Prediction Tool for Tuning Message Passing Programs -- Maintaining Cache Coherency for B?+? Tree Indexes in a Shared Disks Cluster -- Message Strip-Mining Heuristics for High Speed Networks -- Analysis of the Abortion Rate on Lazy Replication Protocols -- protoRAID: A User-Level RAID Emulator for Fast Prototyping in Fibre Channel SAN Environment -- Parallel Computational Model with Dynamic Load Balancing in PC Clusters -- Dynamically Adaptive Binomial Trees for Broadcasting in Heterogeneous Networks of Workstations -- 5: Parallel and Distributed Computing -- Parallel Simulation of Multicomponent Systems -- Parallel Boundary Elements: A Portable 3-D Elastostatic Implementation for Shared Memory Systems -- On Dependence Analysis for SIMD Enhanced Processors -- A Preliminary Nested-Parallel Framework to Efficiently Implement Scientific Applications -- Exploiting Multilevel Parallelism Within Modern Microprocessors: DWT as a Case Study -- Domain Decomposition Methods for PDE Constrained Optimization Problems -- Parallelism in Bioinformatics Workflows -- Complete Pattern Matching: Recursivity Versus Multi-threading -- Probabilistic Program Analysis for Parallelizing Compilers -- 6: Linear and Non-Linear Algebra -- Parallel Acceleration of Krylov Solvers by Factorized Approximate Inverse Preconditioners -- Krylov and Polynomial Iterative Solvers Combined with Partial Spectral Factorization for SPD Linear Systems -- Three Parallel Algorithms for Solving Nonlinear Systems and Optimization Problems -- Numerical Integration of the Differential Riccati Equation: A High Performance Computing Approach -- An Efficient and Stable Parallel Solution for Non-symmetric Toeplitz Linear Systems -- Partial Spectral Information from Linear Systems to Speed-Up Numerical Simulations in Computational Fluid Dynamics -- Parallel Newton Iterative Methods Based on Incomplete LU Factorizations for Solving Nonlinear Systems.

Sommario/riassunto

VECPAR is a series of international conferences dedicated to the promotion and advancement of all aspects of high-performance computing for computational science, as an industrial technique and academic discipline, extending the fr- tier of both the state of the art and the state of practice. The audience for and participants in VECPAR are seen as researchers in academic departments, g- ernment laboratories and industrial organizations. There is now a permanent website for the series, http://vecpar.fe.up.pt, where the history of the conf- ences is described. ThesixtheditionofVECPARwasthe? rsttimetheconferencewascelebrated outside Porto – at the Universitad Politecnica de Valencia (Spain), June 28–30, 2004. The whole conference programme consisted of 6 invited talks, 61 papers and26posters,outof130contributionsthatwereinitiallysubmitted. Themajor themes were divided into large-scale numerical and non-numerical simulations, parallel and grid computing, biosciences, numerical algorithms, data mining and visualization. This postconference book includes the best 48 papers and 5 invited talks presented during the three days of the conference. The book is organized into 6 chapters, with a prominent position reserved for the invited talks and the Best Student Paper. As a whole it appeals to a wide research community, from those involved in the engineering applications to those interested in the actual details of the hardware or software implementations, in line with what, in these days, tends to be considered as computational science and engineering (CSE).