

1. Record Nr.	UNINA9910768465503321
Titolo	High Performance Computing [[electronic resource] ] : Second International Symposium, ISHPC'99, Kyoto, Japan, May 26-28, 1999, Proceedings // edited by Constantine Polychronopoulos, Kazuki Joe, Akira Fukuda, Shinji Tomita
Pubbl/distr/stampa	Berlin, Heidelberg : , : Springer Berlin Heidelberg : , : Imprint : Springer, , 1999
ISBN	3-540-48821-9
Edizione	[1st ed. 1999.]
Descrizione fisica	1 online resource (XIV, 414 p.)
Collana	Lecture Notes in Computer Science, , 0302-9743 ; ; 1615
Disciplina	004/.3
Soggetti	Software engineering Computer organization Computer science—Mathematics Computers Computer mathematics Software Engineering/Programming and Operating Systems Computer Systems Organization and Communication Networks Mathematics of Computing Theory of Computation Computational Mathematics and Numerical Analysis
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Bibliographic Level Mode of Issuance: Monograph
Nota di contenuto	Supercomputing ... Looking ahead -- An introduction to DRAMA project -- An introduction to OCEANS project -- An introduction to NANOS project -- An introduction to HPF+ project -- Synchronous communication of molecular and electronic structure information in a distributed computing environment -- Profile-based selection of load value and address predictors -- Instruction-level microprocessor modeling of scientific applications -- Neural network classifiers execution on superscalar microprocessors -- Message Passing Communication in a parallel computer Cenju-4 -- Coping with very high latencies in petaflop computer systems -- Parallelization via constrained storage mapping optimization -- A comparison of

automatic parallelizing compiler and improvements by compiler directives -- Dynamically adaptive parallel programs -- A feasibility study in iterative compilation -- Multithreading runtime support for loop and functional parallelism -- Parallelization and vectorization effects on a code simulating a vitreous lattice model with constrained dynamics -- Multi-phase hydrodynamic simulations on parallel computer -- Kinetic analysis of functional images: The case for a practical approach to performance prediction -- Parallel radiosity: Evaluation of parallel form factor calculations and a static load balancing algorithm -- Parallel distributed optimization by resource addition and reduction -- Application of parallel sparse direct methods in semiconductor device and process simulation -- Biological- and chemical-parallel applications on a PC cluster -- Unnoticeable jitter in ATM workstation configurations -- Integrity and performance in network attached storage -- Network interface for a data driven network of workstations (D2NOW) -- Basic design of the earth simulator -- Parallel computational design of NJR global climate models -- GeoFEM: High-performance parallel FEM for geophysical applications -- Generalized ? networks -- HTGviz: A graphic tool for the synthesis of automatic and user-driven program parallelization in the compilation process -- Multithreaded LOGFLOW on KUMP/D -- Grouped RAID accesses to reduce false sharing effect in clusters with single I/O space -- Parallel map recognition by pipeline control -- Parallelization of ILU decomposition for elliptic boundary value problem of the PDE on AP3000 -- Task migration in 2D wormhole-routed mesh multicomputers -- A suitable domain decomposition for the adaptive mesh refinement method -- Utilization of cache area in on-chip multiprocessor -- A parallel programming environment for networks -- Emulation facility for data-driven real-time multi-processing -- Failure restoration for location server with user movement learning and prediction.

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### Sommario/riassunto

This book constitutes the refereed proceedings of the Second International Symposium on High-Performance Computing, ISHPC'99, held in Kyoto, Japan in May 1999. The 23 revised full papers presented were carefully selected from a total of 61 submissions. Also included are the abstracts of several invited talks and 12 reviewed short papers corresponding to the poster presentations given at the symposium. The papers address many current issues in high-performance computing and communication, regarding hardware and network architectures as well as regarding software and theoretical foundations; also advanced applications are studied in a variety of fields including modeling, visualisation, and computational science.

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