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Nota di contenuto	High performance integer optimization for crew scheduling -- Simulating synthetic polymer chains in parallel -- Real-time signal processing in a collision avoidance radar system using parallel computing -- The impact of workload on simulation results for distributed transaction processing -- Computer simulation of ageing with an extended penna model -- The scenario management tool SMARTFED for real-time interactive high performance networked simulations -- OPERA: An HPCN architecture for distributed

component-based real-time simulations -- Airport simulation using CORBA and DIS -- Intelligent routing for global broadband satellite internet -- Integrated CAD/CFD visualisation of a generic formula 1 car front wheel flowfield -- Adaptive scheduling strategy optimizer for parallel rolling bearing simulation -- MPI-based parallel implementation of a lithography pattern simulation algorithm -- Parallelizing a high resolution operational ocean model -- Weather and climate forecasts and analyses at MHPCC -- GeoFEM: High performance parallel FEM for solid earth -- Elastic matching of very large digital images on high performance clusters -- Data intensive distributed computing: A medical application example -- Utilizing HPC technology in 3D cardiac modeling -- A parallel algorithm for 3D reconstruction of angiographic images -- A diffraction tomography method for medical imaging implemented on high performance computing environment -- Heterogeneous distribution of computations while solving linear algebra problems on networks of heterogeneous computers -- Modeling and improving locality for irregular problems: Sparse matrix-Vector product on cache memories as a case study -- Parallelization of sparse cholesky factorization on an SMP cluster -- Scalable parallel sparse factorization with left-right looking strategy on shared memory multiprocessors -- Algorithm of two-level parallelization for direct simulation Monte Carlo of unsteady flows in molecular gasdynamics -- Parallelization of gridless finite-size-particle plasma simulation codes -- A distributed object-oriented method for particle simulations on clusters -- A simple dynamic load-balancing scheme for parallel molecular dynamics simulation on distributed memory machines -- Resource management for high-performance PC clusters -- The web as a global computing platform -- WebFlow: A framework for web based metacomputing -- Dynamite-blasting obstacles to parallel cluster computing -- Iterative momentum relaxation for fast lattice-boltzmann simulations -- Lattice gas: An efficient and reusable parallel library based on a graph partitioning technique -- Algorithms of parallel realisation of the PIC method with assembly technology -- Computational aspects of multi-species lattice-gas automata -- Towards a scalable metacomputing storage service -- Dynamic visualization of computations on the internet -- A flexible security system for metacomputing environments -- Computational experiments using distributed tools in a web-based electronic notebook environment -- A parallel/distributed architecture for hierarchically heterogeneous web-based cooperative applications -- Effective dynamic load balancing of the UKMO tracer advection routines -- Dynamic load balancing in parallel finite element simulations -- A load balancing routine for the NAG parallel library -- Performance assessment of parallel spectral analysis: Towards a practical performance model for parallel medical applications -- Parallel algorithm and processor selection based on fuzzy logic -- Recurrent neural network approach for partitioning irregular graphs -- JIAJIA: A software DSM system based on a new cache coherence protocol -- Efficient analytical modelling of multi-level set-associative caches -- Buffer management in wormhole-routed torus multicomputer networks -- Performance analysis of broadcast in synchronized multihop wireless networks -- EARL—A programmable and extensible toolkit for analyzing event traces of message passing programs -- XSIL: Extensible scientific interchange language -- Forklight: A control-synchronous parallel programming language -- HPF parallelization of a Molecular Dynamics code: Strategies and performances -- Design of high-performance C++ package for handling of multidimensional histograms -- Dynamic remote memory acquiring for parallel data

mining on PC cluster: Preliminary performance results -- The digital puglia project: An active digital library of remote sensing data -- An architecture for distributed enterprise data mining -- Representatives selection in multicast group -- Deadlock prevention in incremental replay of message-passing programs -- Remote and concurrent process duplication for SPMD based parallel processing on COWs -- Using BSP to optimize data distribution in skeleton programs -- Swiss-Tx communication libraries -- Finding the optimal unroll-and-jam -- A linker for effective whole-program optimizations -- The Nestor library: A tool for implementing fortran source to source transfromations -- Performance measurements on sandglass-type parallelization of doacross loops -- Transforming and parallelizing ANSI C programs using pattern recognition -- Centralized architecture for parallel query processing on networks of workstations -- Object-oriented database system for large-scale molecular dynamics simulations -- Virtual engineering of multi-disciplinary applications and the significance of seamless accessibility of geometry data -- Some results from a new technique for response time estimation in parallel DBMS -- PastSet—A distributed structured shared memory system -- Optimal scheduling of iterative data-flow programs onto multiprocessors with non-negligible interprocessor communication -- Overlapping communication with computation in distributed object systems -- Exploiting speculative thread-level parallelism on a SMT processor -- Network interface active messages for low overhead communication on SMP PC clusters -- Experimental results about MPI collective communication operations -- MaDCoWS: A scalable distributed shared memory environment for massively parallel multiprocessors -- VisualExpresso: Generating a virtual reality internet -- VIVRE: User-centred visualization -- Geoprove: Geometric probes for virtual environments -- A gang-scheduling system for ASCI blue-pacific -- Towards quality of service for parallel computing: An overview of the MILAN project -- Resource allocation and scheduling in metasystems -- The use of java in high performance computing: A data mining example -- Interfaces and implementations of random number generators for Java Grande applications -- Java as a basis for parallel data mining in workstation clusters -- Garbage collection for large memory Java applications -- The emergence of virtual medical worlds -- Characteristics of users of medical innovations -- Security analysis and design based on a general conceptual security model and UML -- 3DHeartView: Introducing 3-dimensional angiographical modelling -- WWW based service for automated interpretation of diagnostic images: The AIDI-Heart project -- Decision trees—A CIM tool in nursing education -- HealthLine: Integrated information provision to telemedicine networks -- Multi modal presentation in virtual telemedical environments -- Using Web technologies and meta-computing to visualise a simplified simulation model of tumor growth in vitro -- The electronic commerce component in telemedicine -- Efficient implementation of the marching cubes algorithm for rendering medical data -- Multilevel algebraic elliptic solvers -- Parallel performance of chimera overlapping mesh technique -- Electromagnetic scattering with the boundary integral method on MIMD systems -- Decomposition of complex numerical software into cooperating components -- Multi-block parallel simulation of fluid flow in a fuel cell -- A parallel implementation of the block preconditioned GCR method -- Comparison of two parallel analytic simulation models of inhomogeneous distributed parameter systems -- Case studies of four industrial meta-applications -- A parallel approach for solving a lubrication problem in industrial devices -- Restructuring I/O-intensive computations for locality -- Virtual memory management in data

parallel applications -- High performance parallel I/O schemes for irregular applications on clusters of workstations -- Advanced data repository support for Java scientific programming -- Advanced communication optimizations for data-parallel programs -- A cellular automata simulation environment for modelling soil bioremediation -- High efficient parallel computation of resonant frequencies of waveguide loaded cavities on JIAJIA software DSMs -- A study of parallel image processing in a distributed processing environment -- Data prefetching for digital alpha -- Circuit-switched broadcast in multi-port 2D tori -- A distributed algorithm for the estimation of average switching activity in combinational circuits -- BVIEW: A tool for monitoring distributed systems -- The queue system within PHASE -- Support tools for supercomputing and networking -- Ultra high-speed superconductor system design: Phase 2 -- Lilith lights: A network traffic visualization tool for high performance clusters -- DSMC of the inner atmosphere of a comet on shared memory multiprocessors -- Data mining and simulation applied to a staff scheduling problem -- Neural network software for unfolding positron lifetime spectra -- MPVisualizer: A general tool to debug message passing parallel applications -- Effect of multicycle instructions on the integer performance of the dynamically trace scheduled VLIW architecture -- MAD—A top down approach to parallel program debugging -- High-performance programming support for multimedia document database management -- Behavioral objects and layered services: The application programming style in the harness metacomputing system -- Coordination models and facilities cou.

Sommario/riassunto

This book constitutes the refereed proceedings of the 7th International Conference on High-Performance Computing and Networking, HPCN Europe 1999, held in Amsterdam, The Netherlands in April 1999. The 115 revised full papers presented were carefully selected from a total of close to 200 conference submissions as well as from submissions for various topical workshops. Also included are 40 selected poster presentations. The conference papers are organized in three tracks: end-user applications of HPCN, computational science, and computer science; additionally there are six sections corresponding to topical workshops.