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Nota di contenuto	Evaluation and Performance -- Performance Issues of Distributed MPI Applications in a German Gigabit Testbed -- Reproducible Measurements of MPI Performance Characteristics -- Performance Evaluation of MPI/MBCF with the NAS Parallel Benchmarks -- Performance and Predictability of MPI and BSP Programs on the CRAY T3E -- Automatic Profiling of MPI Applications with Hardware Performance Counters -- Monitor Overhead Measurement with SKaMPI -- A Standard Interface for Debugger Access to Message Queue Information in MPI -- Towards Portable Runtime Support for Irregular and Out-of-Core Computations -- Enhancing the Functionality of Performance Measurement Tools for Message Passing Environments -- Performance Modeling Based on PVM -- Efficient Replay of PVM Programs -- Relating the Execution Behaviour with the Structure of the Application -- Extensions and Improvements -- Extending PVM with consistent cut capabilities: Application Aspects and Implementation Strategies -- Flattening on the Fly: efficient handling of MPI derived datatypes -- PVM Emulation in the Harness Metacomputing System: A Plug-In Based Approach -- Implementing MPI-2 Extended Collective Operations -- Modeling MPI Collective Communications on the AP3000 Multicomputer -- MPL: Efficient Record/Replay of nondeterministic features of message passing libraries -- Comparison of PVM and MPI on SGI multiprocessors in a High Bandwidth Multimedia Application --

On Line Visualisation or Combining the Standard ORNL PVM with a Vendor PVM Implementation -- Native versus Java Message Passing -- JPT: A Java Parallelization Tool -- Facilitating Parallel Programming in PVM Using Condensed Graphs -- Nested Bulk Synchronous Parallel Computing -- Implementation Issues -- An MPI Implementation on the Top of the Virtual Interface Architecture -- MiMPI: A Multithread-Safe Implementation of MPI -- Building MPI for Multi-Programming Systems Using Implicit Information -- The design for a high performance MPI implementation on the Myrinet network -- Implementing MPI's One-Sided Communications for WMPI -- Tools -- A Parallel Genetic Programming Tool Based on PVM -- Net-Console: A Web-Based Development Environment for MPI Programs -- VisualMPI — A Knowledge-Based System for Writing Efficient MPI Applications -- Algorithms -- Solving Generalized Boundary Value Problems with Distributed Computing and Recursive Programming -- Hyper-Rectangle Distribution Algorithm for Parallel Multidimensional Numerical Integration -- Parallel Monte Carlo Algorithms for Sparse SLAE Using MPI -- A Method for Model Parameter Identification Using Parallel Genetic Algorithms -- Large-scale FE modelling in geomechanics: a case study in parallelization -- A Parallel Robust Multigrid Algorithm Based on Semi-coarsening -- Applications in Science and Engineering -- PLIERS: A Parallel Information Retrieval System Using MPI -- Parallel DSIR Text Retrieval System -- PVM Implementation of Heterogeneous ScaLAPACK Dense Linear Solvers -- Using PMD to Parallel-Solve Large-Scale Navier-Stokes Equations. Performance Analysis on SGI/CRAY-T3E Machine -- Implementation Issues of Computational Fluid Dynamics Algorithms on Parallel Computers -- A Scalable Parallel Gauss-Seidel and Jacobi Solver for Animal Genetics -- Parallel Approaches to a Numerically-Intensive Application Using PVM -- Solving the Inverse Toeplitz Eigenproblem Using ScaLAPACK and MPI -- A Parallel Implementation of the Eigenproblem for Large, Symmetric and Sparse Matrices -- Parallel Computation of the SVD of a Matrix Product -- Porting generalized eigenvalue software on distributed memory machines using systolic model principles -- Heading for an Asynchronous Parallel Ocean Model -- Distributed Collision Handling for Particle-Based Simulation -- Parallel watershed algorithm on images from cranial CT-scans using PVM and MPI on a distributed memory system -- MPIPOV: A Parallel Implementation of POV-Ray Based on MPI -- Minimum Communication Cost Fractal Image Compression on PVM -- Cluster Computing Using MPI and Windows NT to Solve the Processing of Remotely Sensed Imagery -- Ground Water Flow Modelling in PVM -- Networking -- Virtual BUS: A Simple Implementation of an Effortless Networking System Based on PVM -- Collective Communication on Dedicated Clusters of Workstations -- Experiences Deploying a Distributed Parallel Processing Environment over a Broadband Multiservice Network -- Asynchronous Communications in MPI - the BIP/Myrinet Approach -- Parallel Computing on PC Clusters — An Alternative to Supercomputers for Industrial Applications -- Benchmarking the PVM Group Communication Efficiency -- Heterogeneous Distributed Systems -- Dynamic Assignment with Process Migration in Distributed Environments -- Parallelizing of Sequential Annotated Programs in PVM Environment -- di_pSystem: A Parallel Programming System for Distributed Memory Architectures -- Parallel NLP Strategies Using PVM on Heterogeneous Distributed Environments -- Using PVM for Distributed Logic Minimization in a Network of Computers.

Sommario/riassunto

Parallel Virtual Machine (PVM) and Message Passing Interface (MPI) are the most frequently used tools for programming according to the

message passing paradigm, which is considered one of the best ways to develop parallel applications. This volume comprises 67 revised contributions presented at the Sixth European PVM/MPI Users' Group Meeting, which was held in Barcelona, Spain, 26-29 September 1999. The conference was organized by the Computer Science Department of the Universitat Autònoma de Barcelona. This conference has been previously held in Liverpool, UK (1998) and Cracow, Poland (1997). The first three conferences were devoted to PVM and were held at the TU Munich, Germany (1996), ENS Lyon, France (1995), and University of Rome (1994). This conference has become a forum for users and developers of PVM, MPI, and other message passing environments. Interaction between those groups has proved to be very useful for developing new ideas in parallel computing and for applying some of those already existent to new practical fields.