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Titolo	Recent Advances in Parallel Virtual Machine and Message Passing Interface : 15th European PVM/MPI Users' Group Meeting, Dublin, Ireland, September 7-10, 2008, Proceedings / / edited by Alexey Lastovetsky, Tahar Kechadi, Jack Dongarra
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Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Invited Talks -- The Next Frontier -- Fault Tolerance for PetaScale Systems: Current Knowledge, Challenges and Opportunities -- Managing Multicore with OpenMP (Extended Abstract) -- MPI Must Evolve or Die -- MPI and Hybrid Programming Models for Petascale Computing -- Some Aspects of Message-Passing on Future Hybrid Systems (Extended Abstract) -- From Parallel Virtual Machine to Virtual Parallel Machine: The Unibus System -- Tutorial -- EuroPVM/MPI Full-Day Tutorial. Using MPI-2: A Problem-Based Approach -- Outstanding

Papers -- Non-data-communication Overheads in MPI: Analysis on Blue Gene/P -- Architecture of the Component Collective Messaging Interface -- X-SRQ - Improving Scalability and Performance of Multi-core InfiniBand Clusters -- A Software Tool for Accurate Estimation of Parameters of Heterogeneous Communication Models -- Applications -- Sparse Non-blocking Collectives in Quantum Mechanical Calculations -- Dynamic Load Balancing on Dedicated Heterogeneous Systems -- Communication Optimization for Medical Image Reconstruction Algorithms -- Collective Operations -- A Simple, Pipelined Algorithm for Large, Irregular All-gather Problems -- MPI Reduction Operations for Sparse Floating-point Data -- Library Internals -- A Prototype Implementation of MPI for SMARTMAP -- Gravel: A Communication Library to Fast Path MPI -- Message Passing for Multi-core and Mutlithreaded Architectures -- Toward Efficient Support for Multithreaded MPI Communication -- MPI Support for Multi-core Architectures: Optimized Shared Memory Collectives -- MPI Datatypes -- Constructing MPI Input-output Datatypes for Efficient Transpacking -- Object-Oriented Message-Passing in Heterogeneous Environments -- MPI I/O -- Implementation and Evaluation of an MPI-IO Interface for GPFS in ROMIO -- Self-consistent MPI-IO Performance Requirements and Expectations -- Synchronisation Issues in Point-to-Point and One-Sided Communications -- Performance Issues of Synchronisation in the MPI-2 One-Sided Communication API -- Lock-Free Asynchronous Rendezvous Design for MPI Point-to-Point Communication -- Tools -- On the Performance of Transparent MPI Piggyback Messages -- Internal Timer Synchronization for Parallel Event Tracing -- A Tool for Optimizing Runtime Parameters of Open MPI -- MADRE: The Memory-Aware Data Redistribution Engine -- MPIBlib: Benchmarking MPI Communications for Parallel Computing on Homogeneous and Heterogeneous Clusters -- Verification of Message Passing Programs -- Visual Debugging of MPI Applications -- Implementing Efficient Dynamic Formal Verification Methods for MPI Programs -- ValiPVM - A Graphical Tool for Structural Testing of PVM Programs -- A Formal Approach to Detect Functionally Irrelevant Barriers in MPI Programs -- Analyzing BlobFlow: A Case Study Using Model Checking to Verify Parallel Scientific Software -- ParSim -- 7th International Special Session on Current Trends in Numerical Simulation for Parallel Engineering Environments: New Directions and Work-in-Progress (ParSim 2008) -- LibGeoDecomp: A Grid-Enabled Library for Geometric Decomposition Codes -- Using Arithmetic Coding for Reduction of Resulting Simulation Data Size on Massively Parallel GPGPUs -- Benchmark Study of a 3d Parallel Code for the Propagation of Large Subduction Earthquakes -- Posters Abstracts -- Vis-OOMPI: Visual Tool for Automatic Code Generation Based on C++/OOMPI -- A Framework for Deploying Self-predefined MPI Communicators and Attributes -- A Framework for Proving Correctness of Adjoint Message-Passing Programs -- A Compact Computing Environment for a Windows Cluster: Giving Hints and Assisting Job Execution -- to Acceleration for MPI Derived Datatypes Using an Enhancer of Memory and Network -- Efficient Collective Communication Paradigms for Hyperspectral Imaging Algorithms Using HeteroMPI -- An MPI-Based System for Testing Multiprocessor and Cluster Communications -- MPI in Wireless Sensor Networks -- Erratum -- Dynamic Load Balancing on Dedicated Heterogeneous Systems.

Sommario/riassunto

This book constitutes the refereed proceedings of the 15th European PVM/MPI Users' Group Meeting held in Dublin, Ireland, in September 2008. The 29 revised full papers presented together with abstracts of 7 invited contributions, 1 tutorial paper and 8 poster papers were

carefully reviewed and selected from 55 submissions. The papers are organized in topical sections on applications, collective operations, library internals, message passing for multi-core and mutlithreaded architectures, MPI datatypes, MPI I/O, synchronisation issues in point-to-point and one-sided communications, tools, and verification of message passing programs. The volume is rounded off with 4 contributions to the special ParSim session on current trends in numerical simulation for parallel engineering environments.