Report on IBM ACTC meeting IBM DesCartes Building, Paris, 24-26/May 2000

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The European ACTC Workshop 2000 was hosted in Paris by the IBM Advanced Computing Technology Center (ACTC) on May 24-26th at IBM Europe headquarters at Place de la Defense.

There were some 130 attendees from both IBM and customer sites with IBM equipment throught Europe and the USA of which 33 gave presentations at the busy workshop.

This user-oriented 3-day event was aimed at sharing information on scientific computing techniques for SP users. The objective of this meeting was to help computational scientists and engineers develop applications that achieve maximum performance and scalability on the IBM SP systems.

The workshop consisted of presentations by IBM staff and users from academia, government labs, industry, and independent software vendors, that covered topics such as migrating codes from other systems, performance analysis and optimization for SP systems, programming tools and techniques, etc. The focus of many presentations this year was the Power3 Winterhawk and Nighthawk nodes which, with v7.1 of the xlf compiler support full OpenMP and MPI enabling the development of mixed-mode programs. There was also discussion of the new debugging, profiling and performance tools becoming available soon.

The final discussion session, in addition to identifying user requirements for which ACTC can seek solutions, considered the possiblity of setting up a European User Group. This would be a natural extension of the SciCOMP group in the USA. Further discussions are now under way and proposals will be presented at the next European Workshop, now under the auspices of S&TC EMEA (Scientific and Technical Computing, European and Middle East Sector) which includes European ACTC staff. In response to this we have, at Daresbury Laboratory, set up an e-mail list *spusers-uk@dl.ac.uk*. Please contact this list if you have questions or comments about IBM SP systems.

Presentations

24/5/2000:

John Levesque (IBM) – *ACTC General Overview*
Guillaume Latu (Universit of Bordeaux I) – *Numerical Simulation of a complex Biological System*
Jean-Louis Lafitte (EPFL, Switzerland) – *Developing a Parallel Infrastructure on the SP for Circuit Simulation*
Carlo Cavazzoni (CINECA, Italy) – *Porting and Performance of an F90 MPI first-principles Molec-*

ular Dynamics Code on the SP3
Ferenc Molnar and Horst Weiss (BASF, Germany) – *Quantum Chemical and Molecular Dynamics Calculations on a Linux Cluster and the IBM SP3 – a comparison*
Pierre Valiron (Observatoire de Grenoble) – *Toward high accuracy ab-initio Quantum Chemistry Modelling – OpenMP strategies for accelerating an explicitly correlated coupled-cluster code*
Stefano Cozzini (INFM-SISSA, Italy) – *Benchmarking Production Codes on SP3*
Klaus Geers (University of Karlsruhe) – *Parallel i/o on IBM SP with GPFS and MPI-IO*
Luigi Borchard (IBM) – *High Performance Storing for Supercomputing*
Paolo Santangelo (INFN, Italy) – *The KLOE Mass Storage Environment*
Luiz Derose (IBM) – *The ScPablo Toolkit for Performance Instrumentation and Visualization*
Luiz Derose (IBM) – *Libraries and Tools for Performance Analysis of Scientific Applications*
Philip Mucci (IBM) – *DynaProf: a portable Dynamic Profiling Tool for serial, MPI, OPenMP and mixed-mode programs + PAPI1.0 status report*

25/5/2000:

Jamshed Mirza (IBM) – *IBM Unix Systems Direction for HPC*
Jay Boisseau (SDCS, USA) – *Early Experiences and Results on SDCS's Blue Horizon*
Raul Silvera (IBM) – *Compiler Optimizations for OpenMP in the XLF v7.1 Compiler*
Robert Allan (Daresbury, UK) – *MPI and OpenMP real Applications running on SP3 Winterhawk II*
Christoph Pospiech (IBM) – *Taming Hybrid Architectures*
Franck Cappello (CNRS-LRI, France) – *Comparing Performance of MPI and MPI+OpenMP for NAS Benchmarks on IBm SP3*
David Klepacki (IBM) – *Balancing Threads and MPI Tasks*
Shuxia Zhang (University of Minnesota) – *64-bit MPI Computing and Porting Distributed Math/Numerical Libraries to the new SP*
Jerzy Wasniewski (UNI-C, Denmark) – *LAWRA, Linear Algebra with Recursive Algorithms*
Pascal Henon (University of Bordeaux I) – *Parallel Sparse Linear Algebra and Applications to Structural Mechanics*
John Hague (IBM) – *Turbo MPI*
Werner Krotz-Vogel (Pallas) – *Pallas Tools at Work – craking performance problems*

26/5/2000:

John Hague (IBM) – *Tuning some European Seather Models for IBM SP*
Alexandre Masselot (UNiversity of Geneva) – *Some simple MPI Benchmarks on various Parallel Architectures*
Frank O'Connell (IBM) – *The Power3 and Power4 microarchitectures*
Kevin Hellman (IBM Petroleum Center) – *Distributed memory prestack Kirchoff time migration*
Holger Holthoff (IBM) – *Recent Experiences with CAE Applications of Power3*
Jean-Yves Blanc (CGG Massy, France) – *Some Aspects of Seismic Processing on SP at CGG*

The day ended with an open discussion moderated by Ulla Thiel and John Levesque.

ACTC have a comprenensive set ot Web pages at *http://www.research.ibm.com/actc* which include links to past workshops. This one can be found at *http://spud-web.tc.cornell.edu/actc/actc_workshop.html* and includes abstracts and presentations.