Matthias Brehm

Position: Group leader HPC at Leibniz Supercomputing Centre in Munich, Germany.

1955 Offenbach, Germany
1975-1981 Studies in Physics and Meteorology, University of Munich, Germany
1981 Diploma/M.S. degree in Meteorology
1986 Ph.D Meteorology, University of Munich, Germany
1986 - Member of Research Staff, Leibniz-Rechenzentrum / Leibniz Supercomputing Centre, Munich
2003- Group Leader HPC

In 1986, I joined Leibniz Computing Centre (LRZ) to build up the supercomputing services. Today, LRZ is one of three top computing facilities in Germany. On the regional and local level, Leibniz provides HPC and general IT services to the universities in the state of Bavaria and to the local Munich universities. My experiences are with the procurement, operation and user support for various generations of HPC systems (CRAY X-MP, Y-MP, T90; KSR 1 and 2; IBM SP; Fujitsu VPP; Hitachi SR8000, the first teraflop system in Europe; Linux-Clusters; and now an SGI ALTIX with almost ten thousand cores and 62TF peak performance).

My focus is on program optimization, user education & training, benchmarking, and automatic performance analysis and monitoring. Unfortunately only little time is left for research. The current research project is about the “Integrated system and application analysis for massively parallel computers”.

What I would like to discuss:
Traditionally, computer centers provide training to their own users. However, world-leading HPC systems are evolving on a very short timescale. Like 15 years ago with the introduction of parallel systems, many new challenges arise: heterogeneous computing, multi-cores, new programming paradigms, controlling ten thousand processors etc.
I would like to find out what the impact of these changes to researchers is, how researchers cope with it, and what kind of advanced training courses on specific topics are of relevance to users.

Matthias Brehm: The inner state of a supercomputer: Getting insight from performance counters. InSiDe – innovatives Supercomputing in Deutschland, Vol 4, No2. 2006, p.20.
http://inside.hlrs.de/pdfs/inSiDE_autumn2006.pdf