Kirk E. Jordan
A New Day, A New High Performance Computer, What Does It Mean for Iterative Methods?

IBM Research
1 Rogers Street
Cambridge
MA 02142
kjordan@us.ibm.com
Hormozd Gahvari
William D. Gropp
Vipin Sachdeva
Martin Schulz
Ulrike M. Yang

A new day is dawning with IBMs latest High Performance Computing (HPC) System as we see core counts continue to rise. In this talk, we will briefly describe this system (in more detail than last year) including some of the software features and explain how it fits into IBMs road to Exascale. More importantly, we will describe some of the work underway pertinent to Iterative Methods. This will serve as a foundation for a talk on Algebraic Multigrid Solvers on Future Supercomputers by Hormozd Gahvari. We will describe some of our experience on this new system including some of our early experiences in using Hybrid Coding (MPI plus OpenMP). In addition, while related to our HPC work, we will mention work continuing to make HPC accessible to a wider audience and eventually targeting the scientific and engineering practitioner directly and explain why this work is of importance and may be of interest to the Iterative Methods community.