Max Planck Advanced Nanotech and Environmental Researchers Get IBM Supercomputer

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The Society will use a cutting-edge IBM supercomputing system to double its computing power, allowing research and experiments which before were not possible. The system is based on 86 units of IBM's newly announced IBM eServer(TM) p5-575 systems and will bring the Max Planck Society's supercomputing power to over 10 Teraflops, doubling their existing installed pSeries compute power. The new supercomputer will help researchers in the Garching Computing Center advance research in the fields of nanotechnology and environmental protection as well as other innovative research projects envisioned by the Society.

The new supercomputing system will be used in different research areas of the Max Planck Institutes. The major part of the installation is dedicated to extremely demanding simulations in materials science. At the Fritz Haber Institute in Berlin, Germany, for example, scientists are simulating heterogeneous catalysis for developing more efficient and environmentally friendly catalysts. For future nano-technologies a study of crystal growth will simulate modern materials. At the Max Planck Institute for Metals Research in Stuttgart, Germany, simulations of biomolecules-nanotube-systems will be run, to model and design bio and biomedical sensors for future applications.

"We have chosen the eServer p5-575 platform running the AIXÂ® operating system because of its extraordinary performance as far as

extremely demanding storage applications are concerned," says Hermann Lederer, head of the applications group at Garching Computing Center. "With this platform, we are able to significantly decrease the time it takes to complete a project, allowing us compete against some of the largest organizations in the research community."

The installation of 86 p5-575 servers running a UNIXÂ® operating system extends the Society's existing supercomputing platform of 32 IBM eServer pSeries(TM) systems. The additional p5-575 compute resources, consisting of single core 1.9 GHz 8-way nodes, have a peak performance of five Teraflops. When combined together with older pSeries systems, the Max Planck Society supercomputer will double to an aggregated value of 10.2 Teraflops. The solution is one of the first p5-575 installations worldwide.

"The space required for high performance computers continues to shrink," says Nurcan Rasig, IBM Director Deep Computing Central Region. "This is best demonstrated by Max Planck Society's nanotechnology research being powered by IBM POWER5(TM) processors, which continue to push the envelope of Moore's Law by increasing compute power per chip. With this solution the Compute Center Garching will become pioneer for future HPC installations."

The new p5-575 is an ultra-thin cluster building block that delivers "off the shelf" supercomputing technology to customers in a small form factor. The new systems use ultra-dense packaging technology innovations to provide high-speed connections between eight POWER5 processors. The new system allows up to 128 eight-processor p5-575 cluster nodes to create a single high-performance system with supercomputing performance capabilities that can power work in areas such as genome research, automotive crash-testing, petroleum exploration, and oceanographic, atmospheric and energy studies. In smaller configurations, the 8-way p5-575 can be deployed as a highly

modular and cost-effective platform for memory-intensive Business Intelligence (BI) and Data Warehousing (DW) applications.