



Edward Reinfurt
Executive Director
New York State Foundation
for Science, Technology and Innovation

Melodie Mayberry-Stewart, PhD
NYS Chief Information Officer
Director of Office for Technology

Contact: Jannette M. Rondó
Phone: 518-292-5700

NEWS

Contact: Rob Roddy
Phone: 518-408-2140

SUPERCOMPUTER FOR CUTTING EDGE RESEARCH AND DEVELOPMENT AVAILABLE TO NEW YORK STATE

New York State Will Award 150 Million CPU Hours to Industry, Academia and Government Organizations on One of the World's Most Powerful Computers

Albany, NY (August 13, 2008) — The New York State Office of the Chief Information Officer and Office for Technology (CIO/OFT) and the New York State Foundation for Science, Technology and Innovation (NYSTAR) today announced that public and private researchers and businesses in New York State have nearly 150 million CPU hours on one of the world's most powerful supercomputers. Over the next three years, businesses, universities and state agencies can apply for time on the supercomputer located at Rensselaer Polytechnic Institute's Computational Center for Nanotechnology Innovations (CCNI).

"The ability to perform cutting-edge research at a fast pace is crucial to the continued development of new products and technology across our state," said Governor Paterson. "The supercomputer is an invaluable resource for our local businesses and universities. I applaud CIO/OFT, NYSTAR and Rensselaer Polytechnic for working with public and private researchers across the State to take advantage of this significant technology."

The global market is becoming increasingly competitive and the State's HPC assets can help differentiate New York firms from the rest of the world by increasing the speed in which they can innovate," said Ed Reinfurt, Executive Director of NYSTAR. Fortune 500 companies along with many smaller companies have expressed extreme interest in using this supercomputing facility to assist them in product development and help them gain a competitive advantage by decreasing their time to market for their new products.

The CCNI has been fully operational for less than one year and already has some key businesses using it. Gene Network Sciences, (GNS) based out of Ithaca, NY, is using the CCNI to develop and test their proprietary applications which are used to weed through enormous amounts of data in genomic research. Cadence Design Systems, a leader in electronic design automation software, is using the massive computational power of the CCNI to perform advanced simulations in chip design as well as research technologies that will be used to develop chips in the future.

“The world is taking notice of the emergence of supercomputers in New York and our state’s burgeoning high-tech economy,” said Dr. Melodie Mayberry-Stewart. “The research and development that takes place on this high-powered computer will have significant implications for medical, agricultural, economic, social programs and public policies. State agencies will be able to use the supercomputer to solve complex problems in public safety, cyber security, education, transportation, health or human services to name just a few — and at no cost. Through this historic partnership with NYSTAR, Rensselaer and IBM, New York will be at the forefront of innovation.”

Supercomputers are playing an increasingly important role in scientific and business research by allowing researchers to create more accurate models of complex processes, simulate problems once thought impossible to solve, and analyze increasing amounts of data generated by experiments. Supercomputers allow cutting-edge research and design to be performed in weeks or months, rather than years using conventional computers.

“CCNI is a wonderful example of how collaboration and joint investments between higher education, government and industry are building an innovation economy in New York. CCNI will hasten scientific advances by extending human insight and discovery through the use of supercomputing technologies,” said Dr. John E. Kelly III, senior vice president and director of research at IBM.

The CCNI increases the technological capacity of academic, public sector, and private sector research in New York. NYSTAR, in partnership with CIO/OFT, will leverage this asset to propel New York forward in areas using computer modeling and simulation. This supercomputer, along with advanced academic cyber-infrastructure, will allow researchers anywhere in New York to participate in this unique opportunity, making this truly a statewide initiative.

“The ability to create and run massive, data-rich models and simulations is crucial for advancing countless academic pursuits and industrial endeavors — from developing new advanced materials to understanding in more detail the physical and life sciences — and is growing more critical every year,” said John E. Kolb, vice president for information services and technology and chief information officer at Rensselaer. “CCNI and other supercomputing systems are shrinking the time required to perform and analyze these massive simulations and computations, which in turn is accelerating innovation across all spectrums of research and product development.”

New York State invested in a \$100 million partnership with Rensselaer and IBM to create one of the world’s most powerful university-based supercomputer centers. As part of New York’s investment in the CCNI, the state was allocated 20% usage of the supercomputer. This partnership is unlike any other in the nation. The State has adopted a usage policy which gives preference to economic development but also includes use for state agencies to conduct research.

New York State Office of Temporary and Disability Assistance (OTDA) Commissioner David Hansell said, “As we strive for an outcome-based service delivery approach to assist low-income New Yorkers in achieving economic security and self-sufficiency, having access to analytical tools and computing resources is a key element for success. CCNI presents a unique opportunity for OTDA and other state agencies to make policy changes that will enhance program performance, accuracy and integrity by mining billions of data records at an unprecedented speed.”

At the heart of the CCNI facility is an IBM Blue Gene supercomputer that will operate at more than 80 teraflops (trillion floating point operations per second). At peak performance, CCNI packs 100 teraflops of massively-parallel computing power, meaning the supercomputer can perform 100 trillion calculations per second — or 15,000 calculations per second for every man, woman, and child on the planet.

Computing hours are measured in central processing units, or CPUs, which serve as the brains of a computer. If it takes 24 hours for a computer with one processor to analyze or render a simple modeling problem, it should take a computer with two processors only 12 hours to complete the same task. When scaled up to a computer with 24 processors, the calculation should only take a single hour. CCNI has more than 32,000 processors, allowing even the most complex modeling problems to be solved in vastly less time than was previously possible.

For further information on how businesses can apply for time at the supercomputer, contact Michael Ridley, Director of High Performance Computing: mridley@nystar.state.ny.us or by phone at 518-292-5700. State agencies can apply for time on the supercomputer by contacting Rico Singleton, Deputy CIO for Enterprise IT Governance: rico.singleton@oft.state.ny.us or by phone at 518-473-2807.