



## **LSU to Receive New IBM Computer**

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In line with the goals of the Flagship Agenda, LSU has taken another major step in improving information technology on its campus. The university recently became the first academic research institution in the country to install an IBM high-density POWER5 processor-based server system.

This new, state-of-the-art supercomputer, which will be called Pelican, is housed in LSU's Office of Computing Services, where it will be overseen by the office's new High Performance Computing Division. According to LSU Chief Information Officer Brian Voss, this new system will "increase the penetration of information technology at LSU," by "providing unprecedented computing power to campus and opening doors to non-traditional users of high-performance computers."

Ravi Arimilli, an IBM Fellow, is an LSU alumnus and the Chief Architect for IBM's POWER5 based microprocessors and servers. Mr. Arimilli and the LSU researchers collaborated on the design point of the Power5 server in order to provide an optimized system design for academia. "Architecting the world's most powerful microprocessor and system (POWER5) and bringing it to my alma mater, LSU, is both exciting and rewarding," said Arimilli. "IBM's culture of innovation, collaboration and open standards is delivering breakthrough technologies to drive the frontier of science. For example, the single rack Pelican supercomputer can consume and compute over 4000 DVD movies every second."

Voss said that the acquisition of the new system is a signal that LSU and the state of Louisiana have truly "arrived" technologically, and the notoriety achieved through such things as the Center for Computation & Technology and its computing resources, has attracted the attention of technology firms such as IBM. These companies, Voss said, now see LSU as a place they want to work with and where they might roll out their new technologies.

"This is all about momentum," Voss explained. "The more you accomplish, the more possibilities open up for attracting new technologies."

The new Pelican supercomputer will replace an older, outdated model, known as

CASPER. In addition, Voss said, it will be relatively easy to use, providing a cutting-edge, high-performance computing option for faculty and graduate researchers who may not traditionally use such resources or who have projects that don't require the size of a machine such as CCT's SuperMike.

"Pelican could be used by a lot of areas that we don't traditionally think of when we think of high-performance computing, such as the School of Music," said Voss. "For instance, when I was at Indiana University, we were approached by a theater and drama professor who wanted to use our supercomputer to conduct lighting and stagecraft simulations and visualizations."

Nevertheless, Voss said, Pelican will also be used by researchers conducting more "typical," scientific research - researchers who want to take advantage of some of the latest technology that IBM has to offer. One such researcher, physics and astronomy professor Joel Tohline, has already participated in a training session on the new supercomputer, along with members of his research team. Tohline, who is studying fluid dynamics in astrophysical settings, said that he believes Pelican will be a valuable new tool for LSU researchers.

"It's good to have IBM as a partner, because they have a strong and long track record for supporting high-performance computing," said Tohline. "It provides a platform that will help us improve the basic simulation tools, and I am pleased that it is available for my group's research."

Indeed, Tohline, along with mechanical engineering professor Sumanta Acharya, are involved in a new, multi-disciplinary program for doctoral students studying computational fluid dynamics. The \$3 million program, known as Integrative Graduate Education and Research Traineeship, or IGERT, was recently awarded to LSU by the National Science Foundation. Both Tohline and Acharya believe that the new Pelican supercomputer will be available resource for the new graduate researchers that the IGERT program attracts.

"I'm always looking forward to taking advantage of a machine with the latest processing capabilities," said Tohline. "I consider this particular machine from IBM to be the top-of-the-line and a real step forward for the campus."

Patrick Motl, a post-doctoral researcher in the Department of Physics and Astronomy has already tested the new machine, running a successful simulation for his research in computational astrophysics.

"I'm very pleased with it. It's a very fast machine compared to what we've been able to work on in the past," said Motl.