Special Guest Lectures

## On Enabling Technologies for HPC Class and Manageable Larger-Scale Component-Based Collaborative Environments

**Petr Holub, Masaryk University, Czech Republic**

Johnston Hall 338
April 02, 2007 - 10:00 am

**Abstract:**
Louisiana State University with technological support from Masaryk University (Czech Rep.) has decided to launch a unique experimental class on high-performance computing taught by prof. Thomas Sterling in spring semester 2007. This class enables students of multiple other universities to participate interactively using high-end multimedia technologies. The class uses low-latency interactive uncompressed high-definition video at 1.5Gbps and AccessGrid audio to connect LSU, Louisiana Tech University, University of Arkansas, MCNC and Masaryk University. In this talk, we will focus on the enabling technologies used, namely the video and audio (from both hardware and software perspective) and the distribution system. Supporting technologies will be mentioned as well, as they are utilized namely to provide the content to participants connected via other than very high bandwidth networks. Because of problem with different start of semesters at different schools, a recording system has been developed that enables real-time storage of the uncompressed HD video and audio has been developed, so that the content can be replayed to the students after the semester starts in the original quality. The talk will not only focus on the enabling technologies currently used and the challenging issues that were encountered both before the course started and during its run, but also on future directions of development and where I see synergy between the research and semi-production services like this. This namely extends to component-based collaborative environments with workflow support, that can enable running larger scale communication systems in a manageable manner.

**Speaker's Bio:**
Petr Holub, Ph.D. (hopet@ics.muni.cz) - graduated at Faculty of Sciences, Masaryk University in Brno and received the Ph.D. degree from Faculty of Informatics MU in informatics, focusing at high-speed networks, multimedia, and parallel and distributed systems. Currently he works at the Institute of Computer Science MU in the Laboratory of Advanced Networking Technologies and participates on its scientific leadership. He is also a researcher with CESNET. His professional interests include high-speed networks and suitable protocols, active networks, user-empowered overlay networks, advanced collaborative environments, grid environments, and computational quantum chemistry and its implementation on distributed systems. He is an author of number of international research papers.

**Refreshments will be served.**
**This lecture has a reception.**



Center for Computation & Technology
2003 Digital Media Center • Telephone: +1 225/578-5890 • Fax: +1 225/578-8957