



Nov 29 - Dec 5, 2009

CCT Provides New High-Performance Computing Cluster for Classroom Instruction, Student Use

CCT has prepared a new high-performance computing cluster, Arete, which will be used exclusively for education, including classroom instruction, distance learning and undergraduate or graduate student projects.

While LSU has other high-performance computing resources on campus available for faculty and students to conduct research, Arete is the most powerful cluster dedicated exclusively to student educational needs.

Arete was named for the Greek quality of excellence in fulfilling one's full potential and purpose.

Arete is housed with the University's other high-performance computing clusters in the Fred C. Frey Computing Services Center. CCT staff have installed and tested Arete to ensure the cluster is operational, and it will be available for campuswide use beginning in the Spring 2010 semester.

CCT purchased Arete as a resource for LSU departments to support courses at all levels. The first course to use Arete will be CSC 7600 "High Performance Computing: Models, Methods and Means," which Department of Computer Science Professor Thomas Sterling will teach this spring on Tuesdays and Thursdays from 10:30 a.m. until noon in Coates 202.

Sterling, who is a faculty member with CCT and an adjunct professor in the Department of Electrical and Computer Engineering, teaches the course from LSU and broadcasts it in real-time to partner sites around the world using high-definition video streamed across high-speed networks. Sterling has taught the course since 2007. It is offered to both graduate and senior level undergraduate students from a variety of departments and disciplines.

"The course provides students with a basic overview of how high-performance computing works, and we wanted make this instruction applicable by giving them a resource to learn programming, develop basic applications and get hands-on experience operating a supercomputing cluster," Sterling said.

Arete is a 72-node cluster with a peak performance of 5.3 Teraflops, with high-speed networking connections and 24 Terabytes of shared storage space. This cluster is comparable in size and speed to the University's other high-performance computing resources.

Although Arete is intended for Sterling's course, students in other disciplines or courses can use the cluster to get practice operating computational resources. Students at the other institutions participating in Sterling's course, including LSU-Shreveport and University of New Orleans, can access Arete remotely to work hands-on at high-performance computing exercises and experiments.

"Faculty and research staff are the primary users for LSU's existing supercomputing systems, and we realized it is important, as part of our academic mission, to also provide students with opportunities to use these machines," said CCT Interim Director Stephen David Beck. "With Arete, we are happy to provide a resource for the whole campus so students can take the skills they learn in the classroom and put them into practice, giving them a much deeper appreciation of how this technology is advancing research in many disciplines."

Pats on the Back:

- An image from the LSU Relativity Group is featured on the title page of Science Highlights, the TeraGrid's annual magazine. The 2009 magazine includes two stories about research furthered through LONI's TeraGrid contributions in the past year:
 - A team of researchers based at Stanford University's Department of Aeronautics and Astronautics used Queen Bee and Abe of the National Center for Supercomputing Applications to create more accurate models of contrail formation, which are aircraft emissions of water vapor and aerosols that interact with background air to form condensation trails, to create a parameterization of contrail and aircraft emission plume behavior for a global climate model.
 - An international team of researchers at LSU, the Albert Einstein Institute in Germany, the California Institute of Technology, and elsewhere is using TeraGrid resources to run numerical simulations of black holes and related astrophysical systems to detect the presence of gravitational waves, solving an as-yet-unconfirmed part of Einstein's Theory of Relativity. TeraGrid provides compute, storage, and network resources that allow the team to work collaboratively at modeling black hole collisions, which enables prediction of what gravitational waves look like and could help scientists recognize them as they occur in the universe.

CCT in the News:

- LSU Professor Thomas Sterling to Be Named International Supercomputing Conference Fellow at SC 09
Source: Supercomputing Online

http://supercomputingonline.com/index.php?option=com_content&view=article&id=17579:lsu-professor-thomas-sterling-to-be-named-international-supercomputing-conference-fellow-at-supercomputing-2009&catid=15:latest

- LSU Student Coins Event Technology
Sources: The Advocate and also in Business Report's Daily Report PM
<http://businessreport.com/archives/daily-report/2009/nov/30/1340/>
<http://www.theadvocate.com/news/78151307.html>

Lectures This Week:

- The CCT Colloquium Series presents "Using Computers to Discover Strange Behavior at Water Surfaces" by Collin Wick, Louisiana Tech University Ph.D., this Friday, Dec. 4, from 1-2 p.m. in Johnston 338. Refreshments will be provided at 12:30 p.m.
- Xin Li, Assistant Professor at CCT and Electrical and Computer Engineering, will be organizing this year's CCT Colloquium Series. He is working hard to put together an interesting program for the coming year and would appreciate any input or suggestions. Feel free to contact Xin at xinli@cct.lsu.edu.

Please Note:

- The last ALL CCT meeting for the Fall 2009 semester will take place Wednesday, Dec. 16. at 3 p.m. in Johnston 338 unless otherwise announced. Please make every effort to attend!
- There will be an "Introduction to Globus Procedures" training on Thursday, Dec. 3 from 1:30-3:30 p.m. Please visit <http://www.hpc.lsu.edu/training/> for more information or to register.
- The LONI Institute (LI) is looking for Louisiana researchers to propose projects that involve the LI Computational Scientists. These computational scientists will help state research groups take advantage of advanced cyberinfrastructure deployed across LONI and the nation. These projects will be based on applications from all state campuses, with the applicants being encouraged to commit some internal resources. Application teams from all state campuses and all companies are eligible to apply for LI partnerships to develop applications that make use of LONI hardware and the staff. Please send your proposals (up to one page) requesting time from the LI computational scientists to manager@institute.loni.org, by Tuesday, Dec. 15, 2009. For more information and a link to the ongoing LI Projects, please visit <http://institute.loni.org/liprojects.php>.
- The CCT Director Search candidates: Arun Bansil, Michael Norman, Stephen David Beck and Bruce Allen -- will be visiting campus to give presentations and meet faculty, staff and students through the second week of December. To review CVs on the four candidates, please visit <http://www.cct.lsu.edu/CCTSearch>.

- Debra Waters is planning the annual CCT holiday lunch at Mike Anderson's for Tuesday, Dec. 15. Please let her know ASAP whether or not you plan to attend by e-mailing her at debra@cct.lsu.edu. She needs at least 25 people to reply before she can make a reservation. You do not need to select menu options or pay at this time; you just need to confirm your attendance.
- This is a reminder about the CCT PS - 18 CCT Training and Conference Room Reservation Policy. Specifically note that 338 Johnston is not to be used for LSU Academic Classes.
- 342 Johnston Hall has been converted into a large work room/collaborative space to accommodate meetings for groups of approximately 8 to 15 people with white boards. To begin reserving this room for use, please book it on the Meeting Maker Calendar as "Work Room Johnston 342". The key is available at the receptionist desk in 216 Johnston Hall.
- Please remember to send your news concerning grants, awards, conferences, or other pertinent information that should be communicated to CCT to PR Manager Kristen Sunde at ksunde@cct.lsu.edu.
- Follow CCT with social media to access photos and see news, events or updated information. Both these pages are public; you do not need a Facebook or Twitter account to view the information.
 - Facebook group: LSU Center for Computation & Technology
 - Twitter @LSUCCT.

Upcoming Grant Deadlines:

- Cyber-Enabled Discovery and Innovation (CDI)
January 04 2010 10:15 am
A Portion Of \$ 36,000,000.00 available
http://www.nsf.gov/pubs/2010/nsf10506/nsf10506.htm?WT.mc_id=USNSF_25
- Note: Please see the CCT deadline Web site, as many NSF deadlines are listed here:
<http://www.cct.lsu.edu/about/grants/deadlines/events.php>