Shrinking 20 years into 2 days

SHARCNET participates in nationwide virtual supercomputer project, will provide new insights into two fundamental processes of life

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SHARCNET has become part of Canada's largest virtual supercomputer, which, from Wednesday to Friday this week, will shrink 20 years worth of biochemistry research into 2 days.

The project, initiated at noon Wednesday and ending at noon on Friday, is the third undertaking by the Canadian Internetworked Scientific Supercomputer (CISS), an initiative that harnesses the total research computing capacity in Canada to create a virtual supercomputer.

SHARCNET is contributing an entire computing cluster to the effort: "Deeppurple", located at The University of Western Ontario, has 44 processors.

CISS-3 will combine the computational power of approximately 4,000 computers across Canada, from Victoria to St. John's, to solve two different computational chemistry problems. The first, led by researchers at the Universities of Calgary and Toronto, will simulate an entire protein folding process to gain a greater understanding of this crucial sequence (improper folding can leader to disorders such as Alzheimer's and Mad Cow). The second project, led by the Hospital for Sick Children in Toronto, will simulate proton movement in the enzyme responsible for a life-giving chemical reaction: respiration.

Partners in this effort include the University of Alberta, C3.ca, 19 different universities, 6 high-performance computing (HPC) consortia, including SHARCNET, 3 research institutions, and several networking partners across Canada.

"SHARCNET pleased to make valuable processing power available to this important project," confirms Carmen Gicante, SHARCNET Executive Director. "We are proud to be a part of a national initiative that not only accelerates scientific progress, but also demonstrates the willingness of research and technical leaders across the country to collaborate and enable something truly outstanding."

The Trellis Project, a team led by Dr. Paul Lu, an Assistant Professor of Computing Science at the University of Alberta, developed the technical infrastructure to create this virtual supercomputer specifically to tackle problems that would otherwise be too large for one research group or institution. In November 2002, the project set a Canadian milestone with CISS-1 when it completed 3.5 years worth of research computation in a single day, with 1,378 computers at 16 different partner sites, including SHARCNET.

The full C3.ca press release, including detailed descriptions of each research project, is available at: http://www.c3.ca/ce/ciss3_t.html

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About SHARCNET

SHARCNET is a multi-institutional High Performance Computing network that spans 11 academic institutions in South Central Ontario. SHARCNET's mission is to provide leading edge computational resources to accelerate the production of world-leading research results. The SHARCNET consortium is lead by the University of Western Ontario, and includes the Universities of Guelph, McMaster, Wilfrid Laurier, Windsor, York, Brock, Waterloo and Ontario Institute of Technology, and colleges Fanshawe and Sheridan. The network also includes affiliations with the Robarts Research Institute, Perimeter Institute, and Fields Institute. SHARCNET supports some of Canada's preeminent academics (over 200 research groups). Ground-breaking research currently being conducted at SHARCNET institutions includes modeling outbreaks of foot and mouth disease; investigating diseases such as SARS; investigating new materials for electronic devices; and developing new models to manage financial risk. SHARCNET is a preferred pre-market testing site for products by HP, Nortel Networks, and Platform Computing.

About C3.ca
C3.ca's (www.c3.ca) mission is to significantly enhance the Canadian information technology infrastructure, by creating a national network of shared computational research facilities interconnected by advanced communications, in order to increase the competitive advantage of Canada's social and economic institutions. C3.ca promotes highest quality computational research projects and implements CISS experiments. The support for experiments such as CISS-3 is provided by highly qualified people from the Technical Analyst Support Program (TASP). TASP managed by C3.ca provides value and service to broad national community TASP supports 19 analysts, provides effective outreach program in a form of workshops, seminars and webinars, maintains sophisticated high performance computing assets, provides

advanced level technical support in high performance computing and provides necessary infrastructure for CISS experiments C3.ca is also putting finishing touches on the Canadian Long Range Plan (LRP) in high performance computing (HPC). LRP addresses Canadian HPC needs and requirements and to build irrefutable case in support of future investments in HPC.

About the Canadian Internetworked Scientific Supercomputer (CISS)

CISS-3 is a Canadian national high performance computing project.

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