

CTC expands supercomputer resources for CU researchers

The Cornell Theory Center (CTC) is now operating the 88th fastest supercomputer in the world and wants to encourage Cornell researchers to take advantage of its capabilities.

CTC has announced the availability of Velocity2 (V2), its newest high-performance computing cluster, made available through a partnership with Dell, Intel and Microsoft that provides \$60 million in resources to expand the center's cluster computing capability. Cluster computing uses a large number of inexpensive processors running in parallel to achieve supercomputer speeds,

The V2 cluster consists of 128 Dell PowerEdge 2650 dual servers with Intel's 2.4 GHz Xeon processors running the Windows operating system, with a 2 GB RAM/Node, 50GB Disk (RAID 0)/Node and Gigabit Ethernet. The new installation has bumped up CTC to 88th on the 2002 list of the top 500 supercomputers, compiled by the University of Manheim, Germany, and the University of Tennessee, from 320th last year. The V2 cluster also is the fastest Windows-based cluster in the United States and the second fastest in the world, after one at Seoul National University, South Korea.

The latest supercomputer list was released at SC2002, the international conference on high-performance computing and networking. The list, www.top500.org, has been compiled twice a year since June 1993 with the help of high-performance computer experts, computational scientists, manufacturers and the Internet community in general.

V2 will be available to Cornell researchers for their largest computationally intensive applications. All members of the campus research community are eligible to apply for an allocation for CTC's resources, which are provided at no cost to researchers. Consultants provide assistance in code porting, optimization and parallelization. Researchers can request an allocation by visiting www.tc.cornell.edu/Services/Allocations/ or by contacting allocations@tc.cornell.edu.

Additional resources for the Cornell community include Velocity+, consisting of 64 Dell PowerEdge 2450 dual servers with Giganet connection and 2GB RAM/node, a pool of serial nodes and EduCluster, a small cluster for undergraduate coursework.

CTC also operates clusters dedicated to specific projects, including the Computational Materials Institute, the Computational Biology Service Unit (CBSU) and the Cornell Institute for Social and Economic Research (CISER). Velocity1, the center's first cluster, will become a .NET network load-balanced cluster, running Microsoft's .Net Server 2003, allowing a secure, standard and scalable way for users to access data and computational services over the Internet. All CTC systems run the Windows 2000 operating system.

CTC-supported projects now under way include CISER's U.S. Census data research into methods for safeguarding the confidentiality of databases while allowing analysts to do real statistical modeling. CTC also recently announced the availability of RepeatFinder, a new Web-

based tool for computational genomicists developed by CBSU and the Boyce Thompson Institute for Plant Research to help scientists search the non-coding regions of a genome for small evolutionary clues.

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