Cornell Theory Center, Cornell National Supercomputer Facility

Address:
Cornell University
Theory Center Building
Ithaca, NY, USA 14853-3801

Email: consult@eagle.tc.cornell.edu

Phone: (607) 254-8686

Description

The Cornell Theory Center—with support from the National Science Foundation, IBM Corporation, the State of New York, and members of its Corporate Research Institute—provides supercomputing resources for researchers nationwide. The Center's resources include two IBM ES/3090 600J supercomputers, staff, and related programs that explore the use of experimental parallel architectures.

Nearly four thousand researchers (including three Nobel Prize winners, fourteen members of the National Academy of Science, and ten members of the National Academy of Engineering) have used the Center's facilities to work on more than eight hundred research projects. This work, led primarily by university faculty at more than one hundred fifty institutions, represents a diversity of scientific disciplines, from the physical to social sciences.

The Center's two IBM ES/3090 600Js each have six vector facilities and a peak performance of 827.6 megaflops. Each has 512 megabytes of memory and 2 gigabytes of expanded storage. The total disk storage capacity is 266 gigabytes. The principle operating system on the supercomputers is IBM's implementation of UNIX, AIX. Each user application may access up to 896 megabytes in AIX. There is software support for vectorization, including a vectorizing compiler and vector libraries. Both interactive and batch modes are provided in the Center's production environments. Users interested in using parallel computing for their production work are strongly encourged to consider applying to the Strategic User Program.

In addition to the production operating environments, full support for communications across the Internet is provided via TCP/IP. Interprocess communications, including remote logins, FTP file transfer, and X Window System are supported. FORTRAN is the primary language; it is supported in scalar, vector, and parallel modes, with interactive debug and execution analysis. A high-performance C compiler is also available. Scientific subroutine libraries are available, including vectorized versions. Online HELP facilities, UNIX man pages, and a Cornell set of TUTOR examples assist users. Graphics software supports both local hardware and remote facilities. Several well-known application packages and a list of software are available upon request.

At Cornell, interactive graphics devices include TCP/IP-attached workstations. Hardcopy devices include videotape production, 35mm slides, plotters, color PostScript printers, and X Window System screen-dump printers. Remote researchers can use X Window System screen utilities or Tektronix emulation to view images. Remote users can also ftp various types of image files and metafiles to themselves for viewing with their own software. Graphics software supported on the supercomputers includes WaveFront and X Window System in AIX. X Window System utilities include xim with WaveFront and volume-renderer interfaces, gnuPLOT, and a

The information in this section is provided in accordance with the copyright notice appearing at the front of this guide.

version of xmovie.

Network Access

Theory Center resources can be reached via NYSERNet, NSFNET, and associated regionals such as SURANet or Milnet (supporting remote login, file transfer, and electronic mail), either directly or through a Sun front-end running Berkeley UNIX. The Theory Center provides file transfer and batch job submission through BITNET. Terminal traffic may access Theory Center via direct dial-ups.

Who Can Use the Center

All proposals for time on Theory Center resources are subject to peer review through the Center's National Allocations Committee. Researchers must submit an application for super-computer time directly to Pat Colasurdo, User Accounts Coordinator, at the address and phone number above.