Center for Theory and Simulation in Science and Engineering
Cornell National Supercomputer Facility

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Description

The Center for Theory and Simulation in Science and Engineering at Cornell University (Theory Center), in cooperation with the National Science Foundation, IBM Corporation, and the State of New York, provides supercomputing resources for researchers nationwide.

The Center's primary supercomputing resource, the Cornell National Supercomputer Facility (CNSF), consists of two IBM 3090-600Es with 12 processors and attached minisupercomputers, giving a peak throughput of over 1.5 gigaflops. All systems fully support ANSI-standard Fortran-77. Each IBM 3090-600E has six vector facilities and gives a peak performance of 696 megaflops. Each has 256 megabytes of memory and 1 gigabyte of expanded storage. Some 75 gigabytes of disk storage in total are available for users. Each application may use up to 1 gigabyte of virtual memory. There is software support for parallelization and vectorization, including a vectorizing compiler and vector libraries. VM/XA SP (CMS) is the operating system; both interactive and batch modes are provided and parallel work can be done in either mode.

The full set of operating system functions and utilities is available for interactive and batch jobs. Communications are supported for a variety of dial-up terminals and TCP/IP networks. FORTRAN is the primary language, and is supported in scalar, vector and parallel mode, with interactive debug and execution analysis. Scientific subroutine libraries are available, including some vectorized versions. HELP facilities and a Cornell set of TUTOR examples assist the user. There is extensive host support for the attached minisupercomputers. Graphics software supports both local hardware and remote facilities. A number of well known application packages are available, as well as a public disk of user contributed packages. A list of software is available upon request.

There are several graphics facilities located on the Cornell campus, connected to the CNSF via a high-speed channel running over a fiber optic link. Each facility contains a wide range of graphics hardware, including sophisticated IBM graphics workstations, various UNIX (a trademark of AT&T Bell Labs) workstations, printers, and plotters. The central facility has equipment to allow researchers to produce computer-generated animation, either on 16mm film or on video tape.

Network Access

The CNSF can be reached via NYSERNet, NSFNet, and associated regionals such as SURANet, Arpanet, Milnet (supporting remote login, file transfer, and mail), either directly or through a Gould frontend running Berkeley UNIX. The CNSF provides file transfer and batch job submission through Bitnet. Terminal traffic may access CNSF via direct dial-ups.

Who Can Use The Center

All proposals for time on the CNSF are subject to peer review through the Theory Center's National Allocations Committee; researchers must submit an application for supercomputer time directly to: Pat Colasurdo, User Accounts Coordinator at the address and phone number above.