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High Performance Computing (HPC), brochure

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Monterey, California: Naval Postgraduate School

The center provides:

- Technical Expertise
  - Consulting
- Platform Recommendations
  - Vendors
  - Hardware
  - Software/operating systems
- A Secure Physical Environment
  - Conditioned power
  - Cooling
- Operating Assistance
  - System administration
  - Head node software upgrades

Locations:

Spanagel 301, 303a
Ingersoll 141
Spanagel 341 (Mac Lab)

For Tours:

Email hpc@nps.edu

For More Information

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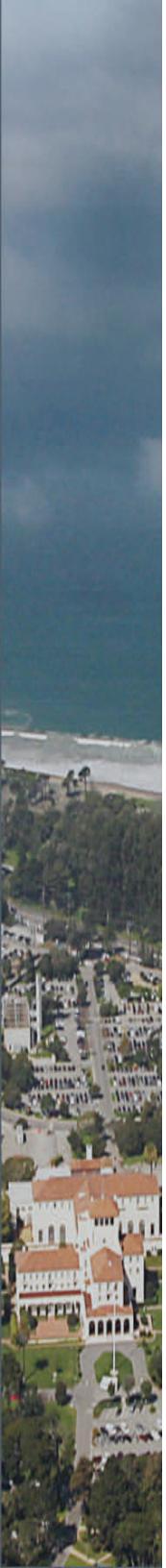
High Performance Computing (HPC)



Promote scientific computing at NPS by providing support to researchers and departments who wish to engage in scientific computing, and establish NPS as a nationally recognized HPC "Center of Excellence."

- HPC Mission Statement

Introduction

The NPS High Performance Computing Center supports investigators using scientific workstations, supercomputer systems, large datasets, special purpose and experimental systems, the new generation of large scale parallel systems, visualization tools, and application and systems software. All components are well integrated and linked over a high speed network.

NPS 1960: World's first all-solid-state computer -- Model 1, Serial No. 1 of Control Data Corporation's CDC1604 -- designed, built and personally certified in the lobby of Spanagel Hall by the legendary Seymour Cray.

NPS January 30, 2009: Ribbon-cutting for "hamming" supercomputer. The Sun Microsystems 6048 blade system is named after the late NPS Professor Richard Hamming. The ribbon was cut by Mrs. Richard Hamming, NPS Provost Leonard Ferrari, and NPS President Dan Oliver.

Overview

The HPC center is physically located in two main locations, the first in Spanagel Hall, and the second in Ingersoll Hall. In Spanagel, the HPC team manages a dozen racks with 180 nodes and 706 processors that belong to individual investigators. In Ingersoll, the HPC team manages the new "hamming" supercomputer (above and right) and an IBM p690 that are available for campus-wide use.

Software (partial list)

- Sun, PGI, gnu, Intel compilers
- SGE, PBS/Torque batch scheduling systems
- MPI: MPICH, OpenMPI, LAM/MPI
- Matlab
- FFTW, netCDF libraries
- Tuned math libraries
- Pixar © "Renderman"

Initiatives

The HPC center provides expertise in the following areas:

- SuperComputing
- Linux and Mac operating systems
- Visualization

In addition, ***Dr. Gabriele Jost***, a world renowned HPC expert, is in residence at NPS via the DoD High Performance Computing and Modernization Program.

"hamming"

- Sun Microsytems 6048 "blade" system.
- 4 racks, each with 4 shelves.
- Each shelf holds 12 server "blades."
- The blades carry multiple sockets with AMD, Intel, or Sparc CPUs.
- 144 blades containing 1152 cores.
- Theoretical peak performance of 10.7 trillion operations per second.
- 112 terabytes of disk.
- Expandable.