

Technical Resources Available

The HPCMP is a technology-led, innovation-focused program committed to extending high-performance computing (HPC) to address the Department of Defense's (DoD's) most significant challenges, because we have seen its impact: in research, where HPC enables DoD to explore new theories and evaluate them well beyond what is practical using experiment alone; in acquisition, through the use of validated applications in design and testing, which significantly reduce the time and cost of developing weapons systems, and improve the quality of their designs; and in operations, where real-time calculations produce just-in-time information for decision makers on the battlefield.

The User Productivity Enhancement, Technology Transfer and Training (PETTT) initiative supports our scientists and engineers by enabling them to take full advantage of Department of Defense (DoD) high-performance computing (HPC) resources in response to executing their mission. PETTT enhances the capability and productivity of the Program's user community through training, collaboration, tool and software development, technology tracking and transfer, and other resources available to users.

HPCMP Resources

Links to the following course topics are currently available in the “*PETTT Virtual Workshop Resources*” section of the Online Knowledge Center (OKC) at <https://okc.erd.c.mil/okc/index.jsp>. This web site is restricted to government personnel or DoD contractors with a Common Access Card (CAC) or YubiKey (a small keyboard that provides a secure login code).

- Linux
- Introduction to C Programming
- Introduction to Fortran Programming Course
- Python for High Performance Computing
- Parallel Programming Concepts
- Message-Passing Interface (MPI) Basics
- MPI Point-to-Point Communications
- MPI Collective Communications
- MPI Advanced Topics
- OpenMP
- MATLAB Programming

- Profiling and Debugging

Due to the multitude of offerings available online, it is not feasible to maintain recommendations for preferred courses, sites, or vendors/institutions. The links on the OKC, therefore, are intended to demonstrate examples of the quality offerings that can meet the needs of a variety of HPCMP users—from new users, who are learning the basics of parallel computing to advanced users, who are tuning applications in order to maximize performance across tens of thousands of processors.

Free Available Alternatives to Cornell Courses on the Program Visual Workshop (PVW)

The PETTT Collaboration and Distance Learning Technologies team developed the following list of free online courses. Searches were conducted based on course topics currently available through the Cornell-hosted PVW, and the first entry under each category is the associated Cornell Virtual HPC Workshop course.

Linux Courses

Cornell Virtual Workshop:

- [An Introduction to Linux](#): This tutorial is for the beginning Linux user, and is intended to get the user acquainted with some of the basic principles of the Linux operating system.