

Workbench for High Performance Computing

As supercomputers become more powerful, they become more complex. In order to take advantage of the increased power, scientific applications that run on these supercomputers will have to become more complex and will have to take advantage of more processing cores. Even those who are expert at optimizing these applications are quickly being overwhelmed. The Workbench for HPC Applications (W-HPC) project is transforming the way these experts develop, debug, optimize, and run their applications. Using the Eclipse platform, W-HPC provides a robust and portable way to manage computational science and engineering code development for a range of research disciplines. W-HPC also includes a targeted education and outreach program including outreach to minority-serving institutions that will train new users, explain the advantages of using Eclipse-based tools, and encourage users participate in the development of new tools.

The next generation of petascale systems will give unprecedented power to the scientific community as they tackle grand challenge problems. However, in order to take advantage of the huge potential performance improvements, application size and complexity will increase substantially as projects become multi-institutional and multi-disciplinary. The Workbench for HPC Applications project is transforming the way the community develops, debugs, optimizes, and runs its applications. As part of the project, the [Eclipse Parallel Tools Platform \(Eclipse PTP\)](#) is being enhanced. Eclipse PTP provides an open source, robust, portable, and sustainable development environment suitable for use with a broad range of scientific codes. Targeted education and outreach activities are also part of the project. They will train new users, explain the advantages of using Eclipse-based tools, and encourage users to participate in the development of new tools.

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