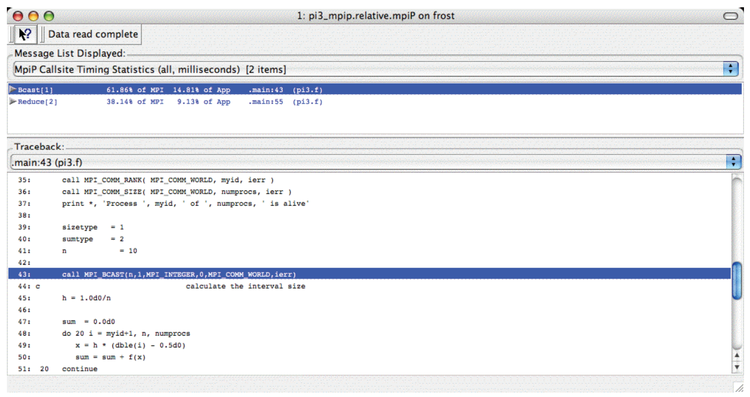
# Maximizing Application Performance of ASC Platforms

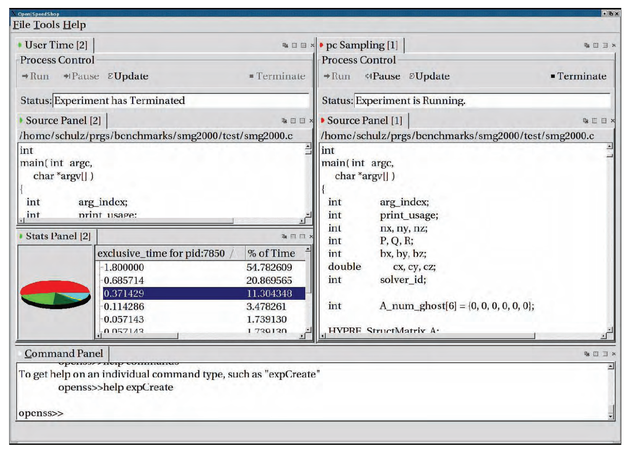
ASC Performance Tools are critical to the optimization of code performance on large scale ASC platforms

Effective utilization of ASC computing platforms requires that ASC codes be optimized to best use the available computing and communication resources. In order to perform this optimization, developers need insight into the details of program execution. ASC has supported a variety of tools for giving developers a detailed view of how their applications run on the platforms.

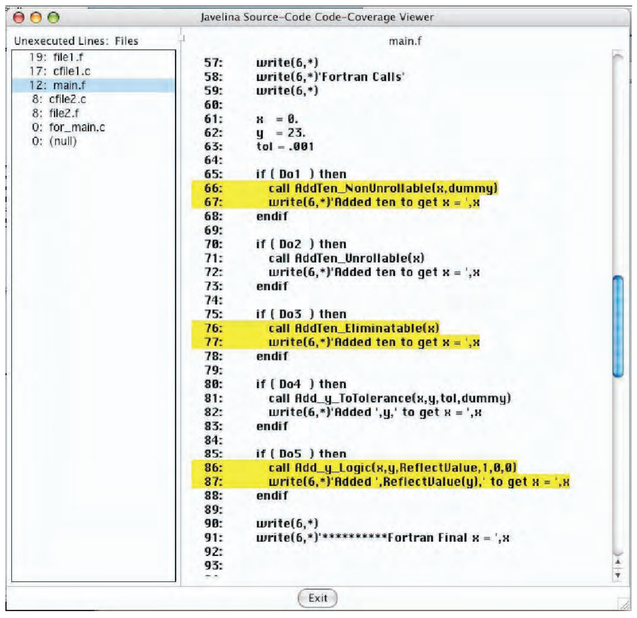
A portion of the ASC tool portfolio will be highlighted by presentations. Accompanying demonstrations at this station will focus on investigative methodology and actual analysis using ASC performance-measurement tools. We will step through the process of optimization for sample codes. We cover how these tools can be used to examine computation to communications balance, computational efficiency, and communication efficiency as well as code coverage. These tools range from the mature to those currently under development. For an in-depth understanding of the performance optimization process as well as the tools, participants can request demonstrations at this station in which the cycle of analysis, optimization, and reanalysis is shown. Additionally, attendees can request guest accounts for the duration of the conference on a local cluster and use the tools themselves either on the code demonstrated or a code of their own.



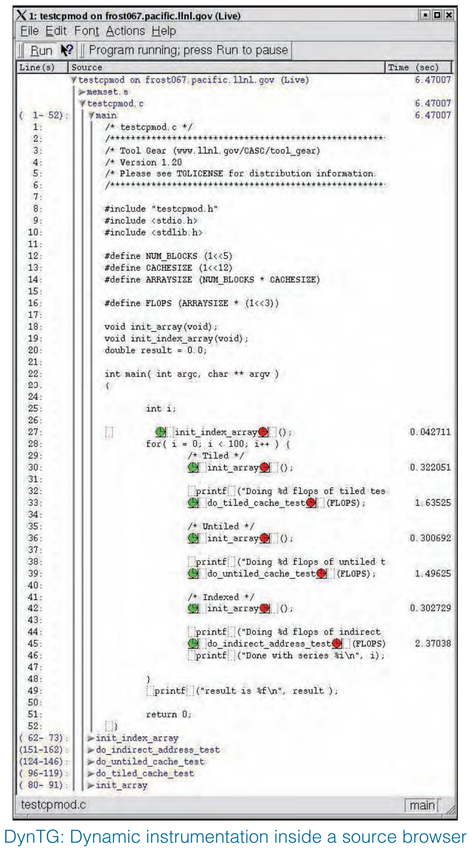

Lightweight MPI profiling with mpiP and Mpip view



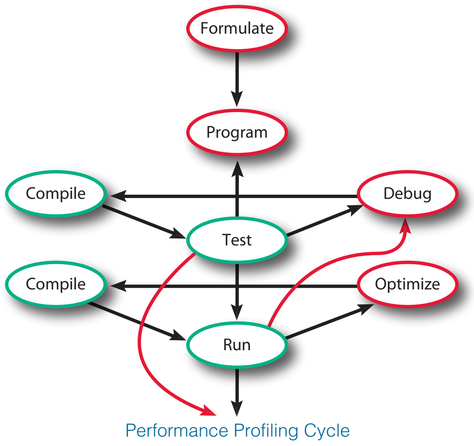

Open source performance analysis with OpenISpeedShop™



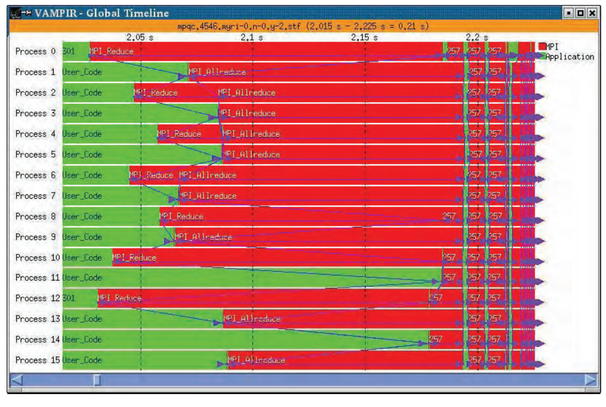

Javelina Source-Code Code-Coverage Viewer



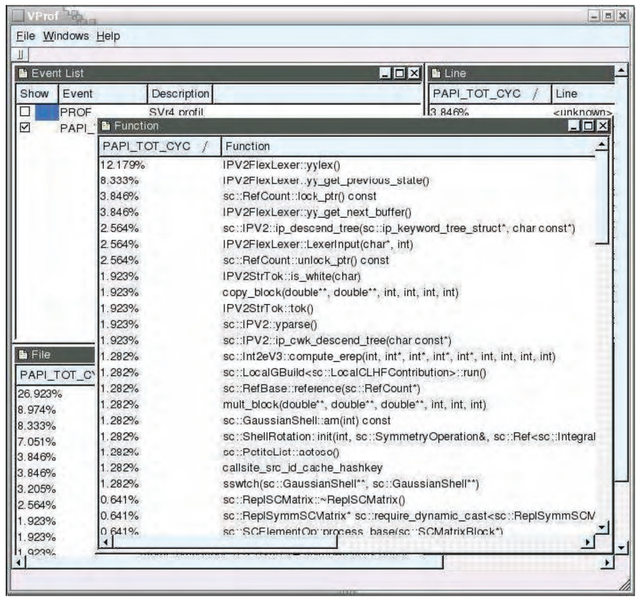

DynTG: Dynamic instrumentation inside a source browser




Performance Profiling Cycle




Vampir MPI Trace Tool Viewer




Processor Utilization and Hardware Performance Monitoring with VProf

LLNL release number: UCRL-ABS_216384

National Nuclear Security Administration

Visualize the Difference