An Integrated Performance Visualizer
for MPI/OpenMP Programs

J. Höflinger, B. Kuhn, W.E. Nagel, P. Petersen, H. Rajic,
S. Shah, J. Vetter, M. Voss, and R. Woo

Abstract

As cluster computing has grown, so has its use for large scientific calculations. Recently, many researchers have experimented with using MPI between nodes of a clustered machine and OpenMP within a node, to manage the use of parallel processing. Unfortunately, very few tools are available for doing an integrated analysis of an MPI/OpenMP program. KAI Software, Pallas GmbH and the US Department of Energy have partnered together to build such a tool, VGV. VGV is designed for doing scalable performance analysis - that is, to make the performance analysis process qualitatively the same for small cluster machines as it is for the largest ASCI systems. This paper describes VGV and gives a flavor of how to find performance problems using it.