Performance Analysis and Visualization

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Introduction

- Supercomputers are used to simulate complex scientific phenomena
- These supercomputers are clusters of individual computers called nodes that are connected to each other
- Programs developed to perform these simulations tend to be very large and complicated
- Analysis and Visualizations of these programs provides insights into the execution behavior and exposes areas of the program that can be targeted for optimizations
- We present a tool that performs such analysis and visualization by providing views and plots

PAVE Tool

- This tool represents the supercomputer as a grid of nodes
- Combined analysis of the 2D and 3D views gives better insight into working of the program
- User can map the output of the simulations to the various nodes of the supercomputer
- Performance metrics can be viewed at various granularities like cluster level and node level.

References

M. Schulz, J. A. Levine, P-T Bremer, T. Gamblin, and V. Pascucci Interpreting performance data across intuitive domains – ICPP'11