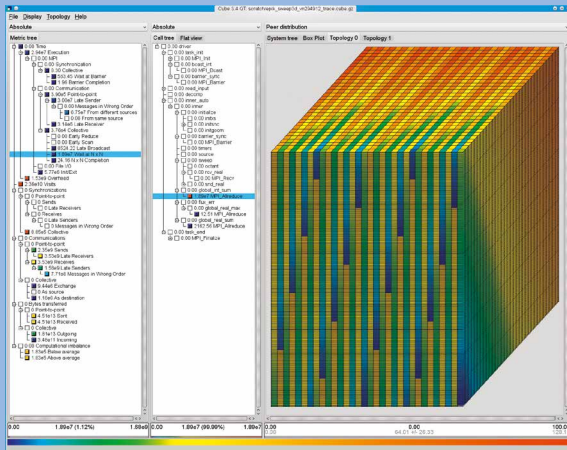


ALGORITHM, TOOL, METHODS LAB

PARALLEL PERFORMANCE



Make the optimization of parallel codes both more effective and more efficient

- Product: performance-analysis tool Scalasca
- Cooperation with TU Darmstadt
- Quick performance overview on call-path level
- Wait-state, root-cause, and critical-path analysis via event tracing
- Scaling tested up to 1 million threads

NHR4CES CSG PP cooperation between

- HPC SW Analysis and Tools Team, JSC, B. Mohr
- RWTH Aachen University, IT Center, C. Terboven
- TU Darmstadt, Parallel Programming Lab, F. Wolf

Some Successful 3rd-party projects

- PRIMA: TAU integration (US DOE)
- H4H: Hybrid programming (EU ITEA2)
- HOPSA: Integration of system and application monitoring (EU FP7)
- RAPID: Performance analysis of industrial applications (Siemens)
- Catwalk: Quick HPC performance models (DFG SPPEXA)
- SCIPHI: Score-P and Cube extensions for Intel Xeon Phi (Intel)
- DEEP-SEA: Programming environment for EU exascale (EuroHPC JU)

Current projects

- POP3: Performance Optimization and Productivity (EuroHPC JU)
- ENSIMA: GPU performance analysis (BMBF)
- NFDIxCS Performance analysis metadata (DFG)
- ExtraNoise: Performance analysis of HPC applications in noisy environments (DFG)
- EUPEX: European Pilot for Exascale (EuroHPC JU)
- VI-HPS: Virtual Institute – High Productivity Supercomputing

