Software Tools to Support Programming
and Optimization on HPC Systems

ISC Tutorial
June 2006

Session I

- 08:15-08:30
  Welcome & Introduction
  Wolfgang Nagel

- 08:30-10:00
  Performance Measurement and Analysis
  Bernd Mohr
  - Terminology, Metrics, and Basic Methods
  - Portable and Simple Measurements Techniques
    - Timing
    - Hardware counters

- 10:00-10:30  Coffee and conversation break

Session II

- 10:30-11:00
  Tools for Parallel Programming
  Bernd Mohr
  - Debugging with TotalView and DDT
  - Profiling with gprof
  - MPI-Profiling with mpiP
  - MPI-'Debugging' with MARMOT

- 11:00-12:00
  Program Instrumentation and Measurement
  Bernd Mohr, Allen Malony
  - KOJAK instrumentation and measurement
  - TAU/PDT instrumentation and measurement
  - [Live demo of KOJAK and TAU instrumentation]
Session III

- 12:00-13:00  Lunch break

- 13:00-14:30  Performance Visualization with Vampir: How to get Insight
  Wolfgang Nagel
  □ [Live demo of VAMPIR using the measured traces from the morning]

- 14:30-15:00  Coffee and conversation break

- 15:00-16:30  Performance Analysis with TAU
  Allen Malony
  □ [Live demo of TAU]

Session IV

- 16:30-17:00  Coffee and conversation break

- 17:00-17:45  The Future: Automatic Performance Analysis?
  Bernd Mohr
  □ [Live demo of KOJAK]

- 17:45-18:00  Wrap-Up

- 18:00  Adjourn