Dagstuhl Seminar 10181
Program Development for Extreme-Scale Computing
2010.05.02 - 2010.05.07

Schedule
2010-05-04

	Monday 5/3	DEMO DAY Tuesday 5/4	DEMO DAY Wednesday 5/5	ANALYSIS DAY Thurday 5/6	Friday 5/6
7:30 8:00	*Breakfast*	*Breakfast*	*Breakfast*	*Breakfast*	*Breakfast*
	Power & Tuning	**Toolset Demos**	**Debugging & MRNet**	**Measurements**	**Exascale Directions**
8:30	Welcome/Intro	Heidi Poxon, CrayPat	Matt/Madhavi, MR-Net	Allan Malony, TAU	Bronis de Supinski, Seq.
9:00	Karen Karavanic, Power	Jim Galaerowicz, O|SS	David Lecomber, DDT	Karl Fuerlinger, IPM2	Bettina Kramer (short talk)
9:30	Jeff Hollingsworth, Autotune			Discussion	Exascale Report
10:00	*Break*	*Break*	*Break*	*Break*	*Break*
	Tracing at Scale	**Toolset Demos**	**Scalability Panel**	**Measurements**	**Future**
10:30	Frank Mueller, ScalaTrace	Allan Malony, TAU	M. Gerndt, Online Analysis	Zoltan Szebenyi	Discussion
11:00	Kathryn Mohror, Tracing	Brian/Markus, Scalasca	Experience Discussion	Kevin Huck,	Next Steps
11:30	Harald Servat, Sampling		and Analysis from Demos	Discussion	Conclusions
12:00 12:30 13:00	*Lunch*	*Lunch*	*Lunch*	*Lunch*	*Lunch*
	Infrastructure	**Tracing Demos**		**In-situ Analysis**	
13:30	Evelyn Duesterwald, X10	Tobias Hilbrich, Vampir		Marc Guix, in situ	
14:00	Luiz de Rose, Debugging	Judit Gimenez, CEBPA		German Llort, Max. Infor.	
14:30	Phil Roth, TBON Pred.			R. Wismueller, Event Data	
15:00	*Break*	*Break*		*Break*	
	Components	**Analysis Demos**		**In-situ Analysis**	
15:30	Michael Brim, Middleware	Todd Gamblin, Libra		David Boehme, Root cause	
16:00	Dorian Arnold, TBON	I-Hsin Chung, IBM HPC T.	Excursion	Todd Gamblin, in situ analysis	
16:30	Focus on Components			Focus on Analysis	
17:00	Open Mic / Panel			Open Mic / Panel	
17:30	*Dinner*	*Dinner*		*Dinner*	

Monday 5/3   The Need for Tools and What tools need

Session 1   **Welcome / Power & Tuning**

8:30-9:00	Bart, Bernd, Jesus, Martin	Welcome, Workshop Goals, Additions to the Agenda
9:00-9:30	Karen Karavanic	Scalable Methods for Performance and Power Data Collection and Analysis
9:30-10:00	Jeff Hollingsworth/Ananta Tiwari	A Scalable Auto-Tuning Framework for Scientific Applications

Session 2   **Scalable Tracing**

10:30-11:00	Frank Mueller	ScalaTrace and Beyond: Ultra-scalable tracing, analysis and modeling of HPC codes
11:00-11:30	Kathryn Mohror	Scalable Event Tracing on High-End Parallel Systems
11:30-12:00	Harald Servat	Benefits of sampling in tracefiles

Session 3   **Languages & Tool Infrastructure**

13:30-14:00	Evelyn Duesterwald	Programming Environment for X10
14:00-14:30	Luiz de Rose	Large Scale Debugging
14:30-15:00	Phil Roth	Predicting the Performance of Tree-Based Overlay Networks

Session 4   **The Need for Components**

15:30-16:00	Michael Brim	Scalable Tool and Middleware Development using Group File Operations
16:00-16:30	Dorian Arnold	Toward scalable autonomous communication infrastructures
16:30-17:30	Moderator: Bart Miller	Components and Interfaces: Where are we? What do we still need?

Tuesday 5/4   Demonstration: Peformance Tools

Session 5   **Integrated Toolset Demos I**

8:30-9:15   Heidi Poxon   Demonstration of CrayPat on 10,000+ cores
9:15-10:00   Jim Galarowicz   Running Open|SpeedShop on Capability Machines

Session 6   **Integrated Toolset Demos II**

10:30-11:15   Allan Malony   Demo: hybrid measurement and analysis infrastructure in TAU
11:15-12:00   Brian Wylie/Markus Geimer   Experiences with Scalasca at Scale

Session 7   **Tracing Demos**
13:30-14:15   Tobias Hilbrich   Scalable Performance Analysis with the Vampir Toolset
14:15-15:00   Judit Gimenez   Using CEPBA-Tools to analyze PEPC and PFLOTRAN at large scale

Session 8   **Analysis Demos**
15:30-16:15   Todd Gamblin   Scalable in-situ analysis techniques
16:15-17:00   I-Hsin Chung   IBM's HPC Toolkit

Weds 5/5   Demonstration: Debuging Tools & Conclusions

Session 9   **Debuging Tools and Support Demos**

8:30-9:15	Matt Legendre/Madhavi Krishnan	Scaling Experiments with MR-Net on the Cray XT
9:15-10:00	David Lecomber	Petascale Debugging - and beyond?

Session 10   **Panel: Scalability**

10:30-11:00	Michael Gerndt	Online Performance Analysis
11:00-12:00	Moderator: Bernd Mohr	What did we learn from the demos?

Thursday 5/6   Analysis at Scale

Session 11   **Measurement Techniques I**

8:30-9:00	Allan Malony	Talk hybrid measurement and analysis infrastructure in TAU
9:00-9:30	Karl Fuerlinger	Effective Holistic Performance Measurement at Petascale Using IPM
9:30-10:00	Moderator: Jesus Labarta	

Session 12   **Measurement Techniques II**

10:30-11:00	Zoltan Szebenyi	Combining PMPI event profiling and clock sampling in Scalasca
11:00-11:30	Kevin Huck	Performance Diagnosis through Classification of Computation Bursts to Known Computational Kernel Behavior
11:30-12:00	Moderator: Jesus Labarta	

Session 13   **In-situ Analysis I**

1:30-2:00	Marc Cases Guix	In-situ performance analysis and data reduction at scale
2:00-2:30	German Llort	Maximizing information-data ratio at run-time
2:30-3:00	Roland Wismueller	Towards an Automatically Distributed Evaluation of Event Data

Session 14   **In-situ Analysis II**

3:30-4:00	David Boehme	Root Cause Analysis
4:00-4:30	Todd Gamblin	Scalable in-situ analysis techniques
4:30-5:30	Moderator: Martin Schulz	Discussion/OpenMic: How to make in-situ analysis work at scale

Friday 5/7 **Exascale and Beyond … / How do we get there?**

Session 15 **Towards Exascale**

  8:30-9:00 Bronis de Supinski Tool strategies for Sequoia and beyond
  9:00-9:15 Bettina Kramer Exascale Computing Research Center
  9:15-10:00 Bernd Mohr & Jesus Labarta IESP Activities

Session 16 **Where are we going from here?**

  10:30-11:30 Bernd Mohr & Jesus Labarta Collecting input for IESP & EESI
      Roadmap Discussion
  11:30-12:00 Bart, Bernd, Jesus, Martin Wrapup/Conclusions/Next steps