



Thursday, June 26, 2014

■ Real Life Value of HPC

June 26, 2014, 09:00 am - 10:30 am

07:30 am - 10:30 am Welcome Coffee

10:30 am - 11:00 am Coffee Break

Hall 1, CCL

Using HPC to Decode Genomes for Customized Medicine

09:00 am - 09:30 am

Weather Prediction & High Performance Computing

09:30 am - 10:00 am

Supercomputing Oil & Gas Reservoirs Seismic Processing & Seismic Inversion

10:00 am - 10:30 am

■ New Benchmarks for Ranking HPC Systems

June 26, 2014, 09:00 am - 10:30 am

07:30 am - 10:30 am Welcome Coffee

10:30 am - 11:00 am Coffee Break

Hall 2, CCL

HPCG: One Year Later

09:00 am - 09:30 am

Crafting Benchmarks for Big Data

09:30 am - 10:00 am

A Proposal for a New Top500 Metric

10:00 am - 10:30 am

■ Data Storage Technology

June 26, 2014, 09:00 am - 10:30 am

07:30 am - 10:30 am Welcome Coffee

10:30 am - 11:00 am Coffee Break

Hall 3, CCL

Re-Imagining Storage for HPC & Big Data

09:00 am - 09:20 am

New Era SSD 2.0 New Role & Responsibility of Flash Storage for Next Generation Computing Environment

09:20 am - 09:40 am

Hard Disk Drive Futures = HPC Storage Future?

09:40 am - 10:00 am

The All-Flash Datacenter for Hyperscale Acceleration

10:00 am - 10:20 am

Questions & Answers

10:20 am - 10:30 am



■ HPC in Asia 01

June 26, 2014, 09:00 am - 10:30 am

07:30 am - 10:30 am Welcome Coffee

10:30 am - 11:00 am Coffee Break

Hall 4, CCL

Welcome Address

09:00 am - 09:05 am

Status Report from China

09:05 am - 09:15 am

Status Report from Korea

09:15 am - 09:25 am

Status Report from Japan

09:25 am - 09:35 am

Status Report from India

09:35 am - 09:45 am

Status Report from Taiwan

09:45 am - 09:55 am

Status Report from Singapore

09:55 am - 10:05 am

Status Report from Australia

10:05 am - 10:15 am

Discussion on Collaborative Work on National Infrastructure Supercomputers

10:15 am - 10:30 am

■ HPC in Asia Posters

June 26, 2014, 09:00 am - 02:00 pm

07:30 am - 10:30 am Welcome Coffee

10:30 am - 11:00 am Coffee Break

02:00 pm - 03:00 pm Farewell Lunch

Hall 4 Foyer, CCL



■ Research Papers 08 Energy Efficiency

June 26, 2014, 09:00 am - 10:30 am

07:30 am - 10:30 am Welcome Coffee

10:30 am - 11:00 am Coffee Break

Hall 5, CCL

Fast & Energy-Efficient Breadth-First Search on a Single NUMA System

09:00 am - 09:30 am

Evaluation of the Impact of Direct Warm-Water Cooling of the HPC Servers on the Data Center Ecosystem

09:30 am - 10:00 am

A Case Study of Energy Aware Scheduling on SuperMUC

10:00 am - 10:30 am



■ Poster Session

June 26, 2014, 10:30 am - 11:00 am

07:30 am - 10:30 am Welcome Coffee

10:30 am - 11:00 am Coffee Break

Hall 4, CCL

(01a) Science Data Processing for the SKA Radio Telescope

(02a) Modeling Power Usage of HPC Systems by RAPL Interface

(03a) Implementing a Hybrid Parallel Overset Grid Algorithm for Computational Fluid Dynamics Applications

(04a) An Initial Microbenchmark Performance Study for Assessing the Suitability of Scientific Workloads Using Virtualized Resources from a Federated Australian Academic Cloud

(05a) Proprietary Interconnect with Low Latency for HA-PACS/TCA

(06a) Efficient Utilization of Memory Hierarchy on GPU Clusters: Optimization Methods & Performance Models

(07a) Cancer Genome Analysis Using Next Generation Sequencing & High Performance Computing

(08a) Development of an AMR Framework for FDM Applications on Parallel Processors

(09a) Galaxies of Supercomputers & Their Underlying Interconnect Topologies Hierarchies

(10a) Cache-Aware Sparse Matrix Format for GPU

(11a) Parallel Preconditioning Methods for Iterative Solvers Based on BILUT(p,d,t)

(12a) Cardiac Arrhythmias in Mathematical Models of Ventricular Tissue: High-Performance Computing Studies

(13a) Application Performance Characterization towards Exa-Scale Supercomputers

(14a) Performance Evaluation of SpMV Considering Matrix Layout Parameters

(15a) Parallelized Mining of Subgraphs Sharing Common Items Using Task-Parallel Language Tascell

(16a) Nanoelectronics with High Performance Computing: Simulations of Mobility in Nanoscale Transistors

(17a) Exploration of Application-level Lossy Compression for Fast Checkpoint/Restart

(18a) Multiple PVAS: Parallel Task Model for the Hybrid Architecture Consisting of Many-Core & Multi-Core

(19a) Large-Scale Multi-Level Sorting for GPU-Based Heterogeneous Architectures

(20a) Tailoring HPC Technologies for Australian Researchers

(21a) Active Packet Pacing as a Congestion Avoidance Technique toward Extreme Scale Interconnect

(22a) Efficient Execution of Multiple Applications Using Process Migration

(23a) Programming Interface for Scientific Computing Cloud Service

(24a) Implementation of a Fast & Efficient Algorithm for Phase-Field Simulation on Heterogeneous Hardware



■ Research Papers 09 Automatic Performance Optimization

June 26, 2014, 10:30 am - 12:00 pm

07:30 am - 10:30 am Welcome Coffee

10:30 am - 11:00 am Coffee Break

Hall 5, CCL

The SIOX Architecture Coupling Automatic Monitoring & Optimization of Parallel I/O

10:30 am - 11:00 am

Framework & Modular Infrastructure for Automation of Architectural Adaptation and Performance Optimization for HPC

11:00 am - 11:30 am

Automatic Exploration of Potential Parallelism in Sequential Applications

11:30 am - 12:00 pm

■ Cryptanalysis & HPC

June 26, 2014, 11:00 am - 12:00 pm

10:30 am - 11:00 am Coffee Break

Hall 1, CCL

Introduction to High-Performance Cryptanalysis

11:00 am - 11:30 am

Cryptanalysis on Reconfigurable Hardware

11:30 am - 12:00 pm



■ Disruptive Technologies (Panel)

June 26, 2014, 11:00 am - 12:00 pm

10:30 am - 11:00 am Coffee Break

Hall 2, CCL

Introduction

11:00 am - 11:05 am

Future of High Performance Computing: A NASA Perspective

11:05 am - 11:10 am

Disruptive Technologies in Advanced Computing from D-Wave

11:10 am - 11:15 am

High Performance Computing Disruption: An NVIDIA Perspective

11:15 am - 11:20 am

DDNs View of the Emerging Disruptions in High Performance Computing

11:20 am - 11:25 am

Emerging Disruptions in High Performance Computing: Perspectives from Inspur

11:25 am - 11:30 am

Disruptive Technologies from Sugon in the HPC Market

11:30 am - 11:35 am

Disruptions in High Performance Computing: A View from Adaptive Computing

11:35 am - 11:40 am

Future of High Performance Computing: An Intel Perspective

11:40 am - 11:45 am

Panel Discussion

11:45 am - 12:00 pm

■ Power Challenges

June 26, 2014, 11:00 am - 12:00 pm

10:30 am - 11:00 am Coffee Break

Hall 3, CCL

High Power, Low Carbon Footprint Why BMW Moved Their HPC Applications to a Data Center in Iceland

11:00 am - 11:30 am

Integration for Efficiency How SoC Designs Can Reduce Data Center Power

11:30 am - 12:00 pm



■ HPC in Asia 02

June 26, 2014, 11:00 am - 12:00 pm

10:30 am - 11:00 am Coffee Break

Hall 4, CCL

The EigenExa Library High Performance & Scalable Direct Eigensolver for Large-Scale Computational Science

11:00 am - 11:20 am

Large Scale 3D Elastic Wave Simulation on Tianhe-2

11:20 am - 11:40 am

Large-Scale Simulation of Respiratory Airflows

11:40 am - 12:00 pm

■ Thursday Keynote

June 26, 2014, 12:15 pm - 01:00 pm

Hall 1, CCL

Brain Derived Computing beyond von Neumann Achievements & Challenges

■ Closing Session with Analyst Crossfire

June 26, 2014, 01:00 pm - 02:00 pm

02:00 pm - 03:00 pm Farewell Lunch

Hall 1, CCL

Analyst Crossfire

01:00 pm - 01:45 pm

Thanks, Auf Wiedersehen & ISC'15

01:45 pm - 02:00 pm

■ Farewell Lunch

June 26, 2014, 02:00 pm - 03:00 pm

02:00 pm - 03:00 pm Farewell Lunch

Hall 1 Foyer, CCL