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## Thursday, June 26, 2014

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### ■ 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

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**Using HPC to Decode Genomes for Customized Medicine**

09:00 am - 09:30 am

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**Weather Prediction & High Performance Computing**

09:30 am - 10:00 am

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**Supercomputing Oil & Gas Reservoirs Seismic Processing & Seismic Inversion**

10:00 am - 10:30 am

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### ■ 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

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**HPCG: One Year Later**

09:00 am - 09:30 am

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**Crafting Benchmarks for Big Data**

09:30 am - 10:00 am

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**A Proposal for a New Top500 Metric**

10:00 am - 10:30 am

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### ■ 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

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**Re-Imagining Storage for HPC & Big Data**

09:00 am - 09:20 am

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

09:20 am - 09:40 am

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**Hard Disk Drive Futures = HPC Storage Future?**

09:40 am - 10:00 am

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**The All-Flash Datacenter for Hyperscale Acceleration**

10:00 am - 10:20 am

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**Questions & Answers**

10:20 am - 10:30 am

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## ■ 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

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### Welcome Address

09:00 am - 09:05 am

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### Status Report from China

09:05 am - 09:15 am

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### Status Report from Korea

09:15 am - 09:25 am

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### Status Report from Japan

09:25 am - 09:35 am

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### Status Report from India

09:35 am - 09:45 am

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### Status Report from Taiwan

09:45 am - 09:55 am

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### Status Report from Singapore

09:55 am - 10:05 am

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### Status Report from Australia

10:05 am - 10:15 am

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### Discussion on Collaborative Work on National Infrastructure Supercomputers

10:15 am - 10:30 am

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## ■ 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



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**■ 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**

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

09:00 am - 09:30 am

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

09:30 am - 10:00 am

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**A Case Study of Energy Aware Scheduling on SuperMUC**

10:00 am - 10:30 am

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## ■ 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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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(20a) Tailoring HPC Technologies for Australian Researchers

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

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

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(23a) Programming Interface for Scientific Computing Cloud Service

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

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**■ 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

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

10:30 am - 11:00 am

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

11:00 am - 11:30 am

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**Automatic Exploration of Potential Parallelism in Sequential Applications**

11:30 am - 12:00 pm

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**■ Cryptanalysis & HPC**

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

10:30 am - 11:00 am Coffee Break

Hall 1, CCL

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**Introduction to High-Performance Cryptanalysis**

11:00 am - 11:30 am

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**Cryptanalysis on Reconfigurable Hardware**

11:30 am - 12:00 pm

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## ■ Disruptive Technologies (Panel)

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

10:30 am - 11:00 am Coffee Break

Hall 2, CCL

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### Introduction

11:00 am - 11:05 am

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### Future of High Performance Computing: A NASA Perspective

11:05 am - 11:10 am

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### Disruptive Technologies in Advanced Computing from D-Wave

11:10 am - 11:15 am

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### High Performance Computing Disruption: An NVIDIA Perspective

11:15 am - 11:20 am

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### DDNs View of the Emerging Disruptions in High Performance Computing

11:20 am - 11:25 am

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### Emerging Disruptions in High Performance Computing: Perspectives from Inspur

11:25 am - 11:30 am

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### Disruptive Technologies from Sugon in the HPC Market

11:30 am - 11:35 am

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### Disruptions in High Performance Computing: A View from Adaptive Computing

11:35 am - 11:40 am

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### Future of High Performance Computing: An Intel Perspective

11:40 am - 11:45 am

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### Panel Discussion

11:45 am - 12:00 pm

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## ■ Power Challenges

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

10:30 am - 11:00 am Coffee Break

Hall 3, CCL

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

11:00 am - 11:30 am

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### Integration for Efficiency How SoC Designs Can Reduce Data Center Power

11:30 am - 12:00 pm

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## ■ HPC in Asia 02

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

10:30 am - 11:00 am Coffee Break

Hall 4, CCL

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

11:00 am - 11:20 am

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Large Scale 3D Elastic Wave Simulation on Tianhe-2

11:20 am - 11:40 am

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Large-Scale Simulation of Respiratory Airflows

11:40 am - 12:00 pm

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## ■ Thursday Keynote

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

Hall 1, CCL

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Brain Derived Computing beyond von Neumann Achievements & Challenges

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## ■ 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

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Analyst Crossfire

01:00 pm - 01:45 pm

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Thanks, Auf Wiedersehen & ISC'15

01:45 pm - 02:00 pm

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## ■ Farewell Lunch

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

02:00 pm - 03:00 pm Farewell Lunch

Hall 1 Foyer, CCL