

2011 Research Track Agenda

Thursday, May 26 – Friday, May 27, 2011

Chair: André Brinkman, Ethan Miller & David Pease

Meeting is Located in Grand Ballroom A
Thursday, May 26

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| 7:30 AM – 9:00 AM | Breakfast / Vendor Exhibits
Located in Ballroom Foyer |
| 7:30 AM - 5:30 PM | Registration/Hospitality Desk
Located in Ballroom Foyer |
| 9:00 AM - 9:15 AM | Opening Remarks |
| 9:15 AM - 10:45 AM | Invited Talk- <i>Preserving Bread Crumbs</i>
<i>Mary G. Baker, HP Labs Palo Alto</i> |
| 10:45 AM - 11:15 AM | AM Break / Vendor Exhibits
Located in Ballroom Foyer |
| 11:15 AM - 12:45 PM | Session 1: Workload Characterization and Steering - Session
Chair: <i>Ron A. Oldfield</i>

Understanding and Improving Computational Science Storage Access
through Continuous Characterization - <i>Philip Carns, Kevin Harms, William
Allcock, Charles Bacon, Samuel Lang, Robert Latham and Robert Ross</i>

Performance Modeling and Analysis of Flash-based Storage Devices -
<i>Howie Huang, Shan Li, Alex Szalay and Andreas Terzis</i>

You Choose: A Performance Interface Enabling Convenient and Efficient
QoS Support for Consolidated Storage Systems - <i>Xuechen Zhang, Yuehai
Xu and Song Jiang</i> |
| 12:45 PM - 2:00 PM | Lunch
Located in Central City |
| 2:00 PM - 3:30 PM | Session 2: Finding Data in Flash - Session Chair: <i>Ethan L. Miller</i>

S-FTL: An Efficient Address Translation for Flash Memory by Exploiting
Spatial Locality - <i>Song Jiang, Lei Zhang, Xinhao Yuan, Hao Hu and Yu
Chen</i>

Hot Data Identification for Flash-based Storage Systems Using Multiple
Bloom Filters - <i>Dongchul Park and David H.C. Du</i>

WAFTL: A Workload Adaptive Flash Translation Layer with Data Partition
- <i>Qingsong Wei, Bozhao Gong, Suraj Pathak, Bharadwaj Veeravalli,
Lingfang Zeng and Kanzo Okada</i> |
| 3:30 PM - 4:00 PM | PM Break / Vendor Exhibits
Located in Ballroom Foyer |
| 4:00 PM - 5:30 PM | Session 3: Short Paper - Session Chair: <i>Dean Hildebrand</i> |
| 6:00 PM - 7:30 PM | Posters and Reception
Located in Central City |

Friday, May 27

7:30 AM – 9:00 AM

Breakfast
Located in Ballroom Foyer

7:30 AM - 4:00 PM

Registration/Hospitality Desk
Located in Ballroom Foyer

9:00 AM - 10:30 AM

Session 4: Interfaces and Virtualization - Session Chair: *Brent Welch*

Flexible, Modular File Volume Virtualization in Loris - *Raja Appuswamy, David C. Van Moolenbroek and Andrew S. Tanenbaum*

Object-based SCM: An Efficient Interface for Storage Class Memories - *Yangwook Kang, Jingpei Yang and Ethan L. Miller*

Design and Evaluation of Oasis: An Active Storage Framework based on T10 OSD Standard - *Yulai Xie, Kiran-Kumar Muniswamy-Reddy, Dan Feng, Darrell D.E. Long, Yangwook Kang, Zhongying Niu and Zhipeng Tan*

10:30 AM – 11:00 AM

AM Break
Located in Ballroom Foyer

11:00 AM – 12:30 PM

Panel Discussion: "How to do good research on storage"

12:30 PM – 2:00 PM

Lunch
Located in Central City

2:00 PM – 3:30 PM

Session 5: Green Storage and the Cloud - Session Chair: *Shankar Pasupathy*

Reliability-Aware Energy Management for Hybrid Storage System - *Wes Felter, Anthony Hylick and John Carter*

Semi-RAID: A Reliable Energy-Aware RAID Data Layout for Sequential Data Access - *Li Xiao, Tan Yu-An and Sun Zhizhuo*

ZoneFS: Stripe Remodeling in Cloud Data Centers - *Lanyue Lu, Dean Hildebrand and Renu Tewari*

3:30 PM – 4:00 PM

PM Break
Located in Ballroom Foyer

4:00 PM – 5:30 PM

Session 6: Making Flash Faster and Cleaner - Session Chair: *Matthew O'Keefe*

Harmonia: A Globally Coordinated Garbage Collector for Arrays of Solid-state Drives - *Youngjae Kim, Sarp Oral, Galen M. Shipman, Junghee Lee, David A. Dillow and Feiyi Wang*

Rejuvenator: A Static Wear Leveling Algorithm for NAND Flash Memory with Minimized Overhead - *Muthukumar Murugan and David H. C. Du*

Boosting Random Write Performance for Enterprise Flash Storage Systems - *Tao Xie and Janak Koshia*

5:30 PM – 5:45 PM

Closing Remarks

Short Papers

Performance Models of Flash-based Solid-State Drives for Real Workloads

Simona Boboila and Peter Desnoyers

Sampling-based Garbage Collection Metadata Management for Flash-based Storage

Biplob Debnath, Srinivasan Krishnan, Weijun Xiao, David J. Lilja and David H. C. Du

Data Allocation Strategies for the Management of Quality of Service in Virtualised Storage Systems

Felipe Franciosi and William Knottenbelt

RAID6L: A Log-Assisted RAID6 Storage Architecture with Improved Write Performance

Chao Jin, Dan Feng, Hong Jiang and Lei Tian

AoE Storage Protocol Over MPLS Network

Marek Landowski and Paul Curran

A Forest-structured Bloom Filter with Flash Memory

Guanlin Lu, Biplob Debnath and David H. C. Du

Using XML and XQuery for Data Management in HPSS

Michael Meseke

Evaluation model for long term data archiving systems in the context of Earth Observation

Ruben F. Perez, Oscar Perez, Oscar Portela, Antonio Saenz, Amalio Nieto, Rosemarie Leone, Mirko Albani and Vincenzo Beruti

DBLK: Deduplication for Primary Block Storage

Yoshihiro Tsuchiya and Takashi Watanabe

The NASA Center for Climate Simulation Data Management System: Toward an iRODS-Based Approach to Scientific Data Services

John Schnase, William P. Webster, Lynn A. Parnell and Daniel Q. Duffy

A Technique for Moving Large Data Sets over High-Performance Long Distance Networks

Bradley Settlemyer, Jonathan Dobson, Stephen Hodson, Jeffery A. Kuehn, Stephen Poole and Thomas Ruwart

Heat-Based Dynamic Data Caching: A Load Balancing Strategy for Energy- Efficient Parallel Storage Systems with Buffer Disks

Ziliang Zong, Xiao Qin, Xiaojun Ruan and Mais Nijim