



MSST 2007 Agenda

Monday, September 24

9:00–12:30 Tutorial: [File System Internals](#)

Presenter: Ahmed Amer (University of Pittsburgh)

12:30–1:30 Lunch (provided for tutorial attendees)

1:30–5:00 Tutorial: [Cryptographic Methods for Protecting Storage Systems](#)

Presenter: Christian Cachin (IBM Zurich Research Lab)

8:00–5:30 [SNAPI'07: 4th Int'l Workshop on Storage Network Architecture and Parallel I/O](#)

8:30–5:00 [Archival Storage Life Cycle Management Workshop](#)

Tuesday, September 25

9:00–9:30 Welcome (James Hughes & Ethan Miller)

9:30–10:30 Keynote: Laura Campbell (Chair: Ann Kerr)

Building and Preserving the Universal Digital Library: A Networked Approach

Laura Campbell is the Associate Librarian for Strategic Initiatives at the Library of Congress.

11:00–12:30 Architectures (Chair: James Hughes)

Preservation DataStores: Architecture for Preservation Aware Storage

Michael Factor, Dalit Naor, Simona Rabinovici-Cohen, Leeat Ramati, Petra Reshef, Julian Satran (IBM Haifa Research Lab)

GreenStor: Application-aided Energy-efficient Storage

Nagapramod Mandagere, Jim Diehl, David Du (University of Minnesota)

Modeling the Impact of Checkpoints on Next-Generation Systems

Ron A. Oldfield (Sandia National Laboratories), Sarala Arunagiri (University of Texas at El Paso), Patricia Teller (University of Texas at El Paso), Seetharami Seelam (IBM TJ Watson Research Center), Maria Ruiz Varela (University of Texas at El Paso), Rolf Riesen (Sandia National Laboratories), Phillip C. Roth (Oak Ridge National Laboratories)

12:30–2:00 Lunch (provided)

2:00–2:15 Presentation of the Reynold B. Johnson Information Storage Systems Award

Dr. Michael R. Williams (IEEE Computer Society President) will present the [2007 IEEE Reynold B. Johnson Information Storage Systems Award](#) to David Hitz and James Lau.

2:15–3:00 Invited Talk: David Hitz and James Lau

3:30–5:00 Short Papers (Chair: Robert Chadduck)

TPT-RAID: a High Performance Box-Fault Tolerant Storage System

Yitzhak Birk and Erez Zilber (Technion - Israel Institute of Technology)

Tornado Codes for MAID Archival Storage

Matthew Woitaszek, Henry Tufo (University of Colorado, Boulder)

Cryptographic Security for a High-Performance Distributed File System

Roman Pletka (AdNovum Informatik AG) Christian Cachin (IBM Zurich Research Laboratory)

Implementation and Evaluation of A Popularity-Based Reconstruction Optimization Algorithm in Availability-Oriented Disk Arrays

Lei Tian (Huazhong University of Science and Technology), Hong Jiang (University of Nebraska-Lincoln), Dan Feng (Huazhong University of Science and Technology), Qin Xin (Symantec), Xing Shu (Huazhong University of Science and Technology)

Performance Evaluation of Multiple TCP connections in iSCSI

Bhargava K. Kancherla, Ganesh M. Narayan, K. Gopinath (Indian Institute of Science)

E-Beam Hard Disk Drive using Gated Carbon Nano Tube Source and Phase Change Media

William Oakley (NanoScale Storage Systems)

The RAM Enhanced Disk Cache Project (REDCAP)

Pilar Gonzalez-Ferez, Juan Piernas (Universidad de Murcia), Toni Cortes (Universitat Politècnica de Catalunya and Barcelona Supercomputing Center)

Inter-node Communication in Peer-to-Peer Storage Clusters

Andre Brinkmann, Effert Sascha (Heinz Nixdorf Institute)

Attribute Storage Design for Object-based Storage Devices

Ananth Devulapalli (Ohio Supercomputer Center), Dennis Dalessandro (Ohio Supercomputer Center), Nawab Ali (Ohio State University), Pete Wyckoff (Ohio Supercomputer Center)

Cost analysis of the X-code double parity array

Alexander Thomasian, Jun Xu (New Jersey Institute of Technology)

CASTOR: A Distributed Storage Resource Facility for High Performance Data Processing at CERN

Giuseppe Lo Presti, Olof Barring, Alasdair Earl, Rosa Maria Garcia Rioja, Sebastien Ponce, Giulia Taurelli, Dennis Waldron, Miguel Coelho dos Santos (CERN)

Using Comprehensive Analysis for Performance Debugging in Distributed Storage Systems

Andrew Leung, Eric Lalonde, Jacob Telleen, James Davis, Carlos Maltzahn (University of California, Santa Cruz)

Hybrid Host/Network Topologies for Massive Storage Clusters

Asha Andrade, Ungzu Mun, Dong Hwan Chung, Alexander Mohr (Stony Brook University)

Early Experiences in Managing Inter-Site Storage Area Networks using Secure Web Services

Fritz McCall (University of Maryland - UMIACS), Ben Kobler (NASA Goddard Space Flight Center)

Flushing Policies for NVCache Enabled Hard Disks

Timothy Bisson, Scott Brandt (University of California, Santa Cruz)

5:30–7:30 Poster Session and Reception (Sponsor: [RAID, Inc.](#))

Short paper presenters will have posters on their research. We encourage all attendees to engage poster presenters (and everyone else) in discussion.

Wednesday, September 26

9:00–10:30 Vendor Presentations (Chair: Ben Kobler)

11:00–12:30 Data Grids (Chair: Jean Bedet)

Storage Resource Managers: Recent International Experience on Requirements and Multiple Co-Operating Implementations

Lana Abadie¹, Paolo Badino¹, Jean-Philippe Baud¹,Ezio Corso², Matt Crawford³, Shaun De Witt⁴, Flavia Donno¹, Alberto Forti⁴, Patrick Fuhrmann⁶, Gilbert Grosdidier⁷, Junmin Gu⁸, Jens Jensen⁴, Sophie Lemaitre¹, Maarten Litmaath¹,Dmitry Litvinsev³, Giuseppe Lo Presti¹, Luca Magnoni⁵, Tigran Mkrtchan⁶, Alexander Moibenko³, Vijaya Natarajan⁸, Gene Oleynik³, Timur Perelmutov³, Don Petravick³, Arie Shoshani⁸, Alex Sim⁸, Massimo Sponza², Riccardo Zappi⁵

¹CERN, European Organization for Nuclear Research, Switzerland

²ICTP/EGRID, Italy

³Fermi National Accelerator Laboratory, Batavia, Illinois, USA

⁴Rutherford Appleton Laboratory, Oxfordshire, England

⁵INFN/CNAF, Italy

⁶Deutsches Elektronen-Synchrotron, DESY, Hamburg, Germany

⁷LAL / IN2P3 / CNRS, Faculté des Sciences, Orsay Cedex, France

⁸Lawrence Berkeley National Laboratory, Berkeley, California, USA

Grid-Enabled Standards-based Data Management

Lana Abadie (CERN), Paolo Badino (CERN), Jean-Philippe Baud (CERN), James Casey (CERN), Akos Frohner (CERN), Gilbert Grosdidier (LAL/IN2P3/CNRS, France), Sophie Lemaitre (CERN), Gavin Mccance (CERN), Remi Mollon (CERN), Krzysztof Nienartowicz (CERN), David Smith (CERN), Paolo Tedesco (CERN)

Quota enforcement for high-performance distributed storage systems

Kristal Pollack (University of California, Santa Cruz), Darrell Long (University of California, Santa Cruz), Richard Golding (IBM), Ralph Becker-Szendy (IBM), Benjamin Reed (Yahoo)

12:30–2:00 Lunch (provided)

2:00–3:30 Panel: Managing Petabyte-Scale Data (Chair: Ron Oldfield)

This panel will discuss issues in managing petascale storage. Each panel member will have 20 minutes to present their experiences, with 30 minutes for general questions.

The panel members are:

- Kian-Tat Lim: Large Synoptic Survey Telescope data challenge, how to prepare for 135 Petabytes of data.
- Bryan Banister: Challenges in managing 5.5 petabytes of simulation data at an NSF supercomputer center.
- Jean-Yves Nief: Challenges in managing the transport of hundreds of terabytes of data for the BaBar high energy physics project.

4:00–5:30 Securing Storage (Chair: Theodore Wong)

Implementing and Evaluating Security Controls for an Object-Based Storage System

Zhongying Niu, Ke Zhou, Den Feng, Hua Chai, Wei Xiao, Chunhua Li (Wuhan National Laboratory for Optoelectronics)

Trustworthy Migration and Retrieval of Regulatory Compliant Records

Soumyadeb Mitra (University of Illinois), Marianne Winslett (University of Illinois), Windsor H Hsu (Data Domain), Xiaonan Ma (IBM Almaden Research Center)

Capability based Secure Access Control to Networked Storage Devices

Michael Factor, Dalit Naor, Eran Rom, Julian Satran, Sivan Tal (IBM Haifa Laboratory)

6:00–8:00 Conference Dinner

Thursday, September 27

9:00–10:30 Object-Based Storage (Chair: Julian Satran)

Enabling database-aware storage with OSD

Aravindan Raghuvier (University of Minnesota), Steven Schlosser (Intel Research), Sami Iren (Seagate Research)

Design and Implementation of a Network Aware Object-based Tape Device
Dingshan He, Nagapramod Mandagere, David Du (University of Minnesota)

Providing Quality of Service Support in Object-Based File System
Joel Wu, Scott Brandt (University of California Santa Cruz)

11:00–12:30 Making Storage More Reliable (Chair: James Nunez)

Unified Logging for Comprehensive Data Protection
Maohua Lu, Shibiao Lin, Tzi-cker Chiueh (Stony Brook University)

A Software Approach to Analyzing Partial Disk Failures
Hai Huang (IBM TJ Watson Research Center), Kang Shin (university of Michigan)

RAIF: Redundant Array of Independent Filesystems
Nikolai Joukov (Stony Brook University, IBM T.J. Watson Research Center), Arun Krishnakumar, Chaitanya Patti, Abhishek Rai, Sunil Satnur, Avishay Traeger, Erez Zadok (Stony Brook University)

9:00–5:00 [SISW 2007: 4th Int'l IEEE Security in Storage Workshop](#)

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