

IEEE/NASA MSST2005
Twenty-Second IEEE / Thirteenth NASA Goddard
Conference on Mass Storage Systems and Technologies
<http://storageconference.org/2005/>

April 11-14, 2005
The Monterey Marriott and the Monterey Conference Center
Monterey, California, USA

Emerging Trends in Scalable Storage

April 11, 2005

Monday

12:00 PM - 5:00 PM **Exhibits Open**

7:00 AM - 8:30 AM **Continental Breakfast**

8:30 AM - 10:00 AM **Session t1**

10:00 AM - 10:30 AM **Break**

10:30 AM - 12:00 PM **Session t2**

12:00 PM - 1:30 PM **Lunch**

1:30 PM - 3:00 PM **Session t3**

3:00 PM - 3:30 PM **Break**

3:30 PM - 5:00 PM **Session t4**

6:00 PM - 9:00 PM

Welcome Reception

Chair, Jack Cole **Tutorials**

Michael Knowles **StorCloud - A Heterogeneous Petabyte Storage Initiative.**

Bryan Banister **SAN, HPSS, Sam-QFS, and GPFS technology in use at SDSC**

Joe Tucek **Trade-offs in Protecting Storage: A Meta-Data Comparison of Cryptographic, Backup/Versioning, Immutible/Tamper-Proof, and Redundant Storage Solutions**

James Hughes **Storage Encryption algorithms and standards**

April 12, 2005

Tuesday

10:00 AM - 8:00 PM **Exhibits Open**

7:00 AM - 8:15 AM **Continental Breakfast**

Chair, Merritt Jones / Jim Hughes **Welcome and Keynote**

8:15 AM - 9:45 AM

To be determined

9:45 AM - 10:30 AM **Break**

Session 1

Chair, Jim Hughes **File Systems**

10:30 AM - 11:00 AM

Richard Hedges, Bill Loewe, Tyce McLarty, Chris Morrone **Parallel File System Testing for the Lunatic Fringe: the care and feeding of restless I/O Power Users**

11:00 AM - 11:30 AM

Dean Hildebrand, Peter Honeyman **Exporting Storage Systems in a Scalable Manner with pNFS**

11:30 AM - 12:00 PM

Yingping Lu, David H.C. Du, Thomas Ruwart **QoS Provisioning Framework for OSD-based Storage System**

12:00 PM - 1:30 PM **Lunch**

Session 2

Chair, PC Hariharan **Preservation**

1:30 PM - 2:00 PM

Reagan W. Moore, Joseph F. Jaja, Robert Chadduck **Mitigating Risk of Data Loss in Preservation Environments**

2:00 PM - 2:30 PM

Alexander Ames, Nikhil Bobb, Scott A. Brand, Adam Hiat, Carlos Maltzahn, Ethan L. Miller, Alisa Neeman, Deepa Tuteja **Richer File System Metadata Using Links and Attributes**

2:30 PM - 3:00 PM

Abed Elhamid Lawabni, Changjin Hong, David H.C. Du, Ahmed H. Tewfik **A Novel Update Propagation Module for the Data Provenance Problem: A Contemplating Vision on Realizing Data Provenance from Models to Storage**

3:00 PM - 3:45 PM **Break**

Session 3

Chair, Steve Louis **Site Reports**

3:45 PM - 4:15 PM

Gene Oleynik, Bonnie Alcorn, Wayne Baisley, Jon Bakken, David Berg, Eileen Berman, Chih-Hao Huang, Terry Jones, Robert D. Kennedy, Alexander Kulyavtsev, Alexander Moibenko, Timur Perelmutov, Don Petravick, Vladimir Podstavkov, George Szmuksta, Michael Zalokar **Fermilab's Multi-Petabyte Scalable Mass Storage System**

4:15 PM - 4:45 PM

J. Behnke, T. Watts, B. Kobler, D. Lowe, S. Fox, and R. Meyer **ESDIS Petabyte Archives: Tenth Anniversary**

4:45 PM - 5:15 PM

Bryan Hess, Michael Haddox-Schatz, M. Andrew Kowalski **The Design and Evolution of Jefferson Lab's Jasmine Mass Storage System**

6:00 PM - 9:00 PM

Vendor Reception

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April 13, 2005

Wednesday

10:00 AM - 4:00 PM **Exhibits Open**

7:00 AM - 8:15 AM **Continental Breakfast**

Session 4

Chair, Tom Ruwart **Systems**

8:15 AM - 8:45 AM Phil Andrews, Bryan Banister, Patricia Kovatch, Chris Jordan, Roger Haskin **Scaling a Global File System to the Greatest Possible Extent, Performance, Capacity, and Number of Users**

8:45 AM - 9:15 AM Mohammad Banikazemi, Dan Poff, Bulent Abali **Storage-based Intrusion Detection for Storage Area Networks (SANs)**

9:15 AM - 9:45 AM Michail D. Flouris, Angelos Bilas **Violin: A Framework for Extensible Block-level Storage**

9:45 AM - 10:30 AM **Break**

Session 5

Chair, Gene Harano **Mass Storage Systems**

10:30 AM - 11:00 AM Richard Watson **High Performance Storage System Scalability: Architecture, Implementation and Experience**

11:00 AM - 11:30 AM Akshat Verma, Upendra Sharma, Jim Rubas, David Pease, Marc Kaplan, Rohit Jain, Murthy Devaralonda, Mandis Beigi **An Architecture for Lifecycle Management in Very Large File Systems**

11:30 AM - 12:00 PM Steve Cranage **OpenSMS**

12:00 PM - 1:30 PM **Lunch**

1:30 PM - 3:00 PM

Chair, Robert Chadduck **Short Papers**

Aameek Singh, Kaladhar Voruganti, Sandeep Gopisetty, David Pease, Ling Liu **A Hybrid Access Model for Storage Area Networks**

Qin Xin, Ethan L. Miller, Thomas J. E. Schwarz, S. J., Darrell D. E. Long **Impact of Failure on Interconnection Networks for Large Storage Systems**

Joseph JaJa, Mike Smorul, Fritz McCall, Yang Wang **Scalable, Reliable Mashalling and Organization of Distributed Large Scale Data onto Enterprise Storage Environments**

Feng Wang, Bo Hong, Scott A. Brandt, Darrell D.E. Long **Using MEMS-based Storage to Boost Disk Performance**

Girish Motwani, K. Gopinath **Evaluation of Advanced TCP Stacks in the iSCSI Environment using Simulation Model**

L. Qiao, B. Iyer, D. Agrawal, A. El Abbadi, and S. Uttamchandani **StorageDB: Enhancing the Storage Sub-system with DBMS Functionalities**

Kevin KleinOowski, Tom Ruwart, David J. Lijja **Communicating Quality of Service Requirements to an Object-Based Storage Device**

D. Duffy, N. Acks, V. Noga, T. Schardt, J. Gary, B. Fink, B. Kobler, M. Donovan, J. McEvaney, and K. Kamischke **Beyond the Storage Area Network: Data Intensive Computing in a Distributed Environment**

Matthew Craven, Ahmed Amer **Predictive Reduction of Power and Latency (PuRPLe)**

P. Nowoczynski, N. Stone, J. Sommerfield, B. Gill, and J. Scott **Slash - The Scalable Lightweight Storage Heirarchy**

Kristal T. Pollack, Scott A. Brandt **Efficient Access Control for Distributed Hierarchical File Systems**

Dimitrios Xinidis, Angelos Bilas, Michail D. Flouris **Performance Evaluation of Commodity iSCSI-based Storage Systems**

Aameek Singh, Kaladhar Voruganti, Sandeep Gopisetty, David Pease, Linda Duyanovich, Ling Liu **Security vs Performance: Tradeoffs using a Trust Framework**

Steve C. Chiu, Alok N. Choudhary, Mahmut T. Kandemir **Fault Recovery Designs for Processor-Embedded Distributed Storage Architectures with I/O-Intensive DB Workloads**

H. Wong, Y. Wilson, H. Yeo, D. Wang, Z. Li, K. Leong, and K. Yong **Dynamic Storage Resource Management Framework for the Grid**

3:00 PM - 3:45 PM **Break**

3:45 PM - 5:15 PM

Chair, Ethan Miller / Jim Hughes **Work In Progress / Extemporaneous Talks**

5:30 PM - 7:00 PM

Chair, Jack Cole/Ben Kobler/Tom Ruwart/Gary Sobol **Birds of a Feather - top100io**

6:00 PM - 9:00 PM

Social Function at the Maritime Museum

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April 14, 2005

Thursday

9:00 AM - 12:00 PM **Exhibits Open**

7:00 AM - 8:15 AM **Continental Breakfast**

Session 6

Chair, Jean Bedet **Performance**

8:15 AM - 8:45 AM

Bill Anderson **Mass Storage System Performance Prediction Using a Trace-Driven Simulator**

8:45 AM - 9:15 AM

Tom Ruwart, Yingping Lu **Performance Impact of External Vibration on Consumer-Grade and Enterprise-Class Disk Drives**

9:15 AM - 9:45 AM

Bo Hong, Tara M. Madhyastha **The Relevance of Long-Range Dependence in Disk Traffic and Implications for Trace Synthesis**

9:45 AM - 10:30 AM **Break**

10:30 AM - 12:00 PM

Chair, Dick Watson **Emerging Technology Panel**

Mark Gary , Dave Anderson, Glen Jaquette, Aloke Guha, Kevin Curtis, Gordon Hughes

12:00 PM - 1:30 PM **Lunch**

1:30 PM - 3:00 PM

Chair, **Vendor Talks**

Aloke Guha **Tuning MAID Storage for Backup and Archive Data**

Laura Shepard **SGI Vendor briefing**

Bob Gilligan **Efficient Data Path Object Migration for a Highly Available, Scalable IP SAN**

Raphael Yahalom **Validating SAN Changes with Onaro's SANscreen**

Hossein ZiaShakeri **Making Removable Disk Technology a Reality - Creating a New Disk/Tape Scalable Storage Model**

Jean-Luc Chatelain **Using Grid-Computing Architecture to Solve the Information Storage Dilemma**

Gary Smith **Information Security Demands a Layered Approach in IP SANs**

Gary Smith **Darwin Meets Data Storage: Backup Diverges into Televaulting**

Jamie Ernst **Overland Storage Vendor Briefing Proposal**

Melissa Cohen **Benefits of using iSCSI within SANs**

3:00 PM

Conference Adjourned