

**NSDI '06**  
3rd Symposium on  
Networked Systems  
Design & Implementation

May 8–10, 2006  
San Jose, CA

Sponsored by  
**USENIX**  
in cooperation with  
ACM SIGCOMM & ACM SIGOPS

Join us in San Jose, California, May 8–10, 2006, for the latest in networked systems research.

NSDI '06 focuses on the design principles of large-scale networks and distributed systems. This year's program includes a Keynote Address by Udi Manber, VP of Engineering, Google Inc.; a diverse collection of 28 refereed papers; and a poster session. Don't miss the opportunity to gather with researchers from across the networking and systems community—including computer networking, distributed systems, and operating systems—to foster cross-disciplinary approaches and address shared research challenges.

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Larry Peterson, *Princeton University*  
Timothy Roscoe, *Intel Research*

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David Andersen, *Carnegie Mellon University*  
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#### HOTEL & REGISTRATION

##### Hotel Information

*Hotel Reservation Discount Deadline:*  
April 17, 2006

The Fairmont San Jose  
170 South Market Street  
San Jose, CA 95113  
Telephone: (408) 998-1900

Rates: \$150 single/double (plus 10% occupancy  
+ \$2.00 per room/per night tax)

**Note:** When the rooms in the USENIX block are sold out, requests will be handled on a space-available basis at the hotel's standard rate. Make your reservations early!

##### Technical Session Registration Fees

*Registration Deadline:* April 17, 2006

Member:\* \$675  
Nonmember: \$790  
Full-time Student Member:\* \$270  
Full-time Student Nonmember: \$310

\*For current members of USENIX, ACM SIGOPS, ACM SIGCOMM, EurOpen.SE, or NUUG.

The nonmember rates include a one-year USENIX membership.

After April 17, members and nonmembers (not students) add \$150 to their technical sessions fee.

##### Register Online:

<http://www.usenix.org/nsdi06>

##### Questions?

Telephone: 510-528-8649  
Fax: 510-548-5738  
Email: [nsdi06\\_reg@usenix.org](mailto:nsdi06_reg@usenix.org)

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Register by April 17 and save!  
<http://www.usenix.org/nsdi06>

**MONDAY, MAY 8**

8:45 a.m.–9:00 a.m.

**Opening Remarks**Timothy Roscoe and Larry Peterson, *Program Chairs*

9:00 a.m.–10:00 a.m.

**Keynote Address**Udi Manber, *VP of Engineering, Google Inc.*

10:00 a.m.–10:30 a.m. Break

10:30 a.m.–noon

**Wide-Area Network Services I**

Session Chair: Steve Hand

**Evaluation of a Deployed, Distributed Object Reputation System for Peer-to-Peer Filesharing**Kevin Walsh and Emin Gün Sirer, *Cornell U.***Corona: A High Performance Publish-Subscribe System for the World Wide Web**Venugopalan Ramasubramanian, Ryan Peterson, and Emin Gün Sirer, *Cornell U.***Scale and Performance in the CoBlitz Large-File Distribution Service**KyoungSoo Park and Vivek S. Pai, *Princeton University*noon–1:30 p.m. Lunch (*on your own*)

1:30 p.m.–3:00 p.m.

**Replication and Availability**

Session Chair: Steve Gribble

**Efficient Replica Maintenance for Distributed Storage Systems**Byung-Gon Chun, *University of California, Berkeley*; Frank Dabek, *MIT*; Andreas Haeberlen, *MPI-SWS*; Emil Sit, *MIT*; Hakim Weatherspoon, *University of California, Berkeley*; M. Frans Kaashoek, *MIT*; John Kubiatowicz, *University of California, Berkeley*; and Robert Morris, *MIT***PRACTI Replication**Mike Dahlin, Lei Gao, and Amol Nayate, *U. of Texas at Austin*; Arun Venkataramani, *U. of Massachusetts at Amherst*; Praveen Yalagandula and Jiandan Zheng, *U. of Texas at Austin***Exploiting Availability Prediction in Distributed Systems**James W. Mickens and Brian D. Noble, *U. of Michigan*

3:00 p.m.–3:30 p.m. Break

3:30 p.m.–5:00 p.m.

**Tools**

Session Chair: Neil Spring

**To Infinity and Beyond: Time-Warped Network Emulation**Diwaker Gupta, Kenneth Yocum, Marvin McNett, Alex C. Snoeren, Amin Vahdat, and Geoffrey M. Voelker, *University of California, San Diego***The Dark Oracle: Perspective-Aware Unused and Unreachable Address Discovery**Evan Cooke, Michael Bailey, and Farnam Jahanian, *U. of Michigan*; Richard Mortier, *Microsoft Research, Cambridge, UK***Pip: Detecting the Unexpected in Distributed Systems**Patrick Reynolds, *Duke U.*; Charles Killian, *University of California, San Diego*; Janet L. Wiener, Jeffrey C. Mogul, and Mehul A. Shah, *HP Labs*; Amin Vahdat, *University of California, San Diego*

5:30 p.m.–7:00 p.m. Reception &amp; Poster Session

**TUESDAY, MAY 9**

8:30 a.m.–10:00 a.m.

**Wide-Area Network Services II**

Session Chair: Emin Gün Sirer

**OASIS: Anycast for Any Service**Michael J. Freedman, *New York University*; Karthik Lakshminarayanan, *University of California, Berkeley*; David Mazières, *Stanford University***Exploring the Design of Multi-Site Web Services Using the OverCite Digital Library**Jeremy Stribling and Jinyang Li, *MIT Computer Science and Artificial Intelligence Laboratory*; Isaac G. Council, *Pennsylvania State U.*; M. Frans Kaashoek and Robert Morris, *MIT Computer Science and Artificial Intelligence Laboratory***Colyseus: A Distributed Architecture for Online Multiplayer Games**Ashwin Bharambe, Jeffrey Pang, and Srinivasan Seshan, *Carnegie Mellon U.*

10:00 a.m.–10:30 a.m. Break

10:30 a.m.–noon

**End-System Design**

Session Chair: David Anderson

**Na Kika: Secure Service Execution and Composition in an Open Edge-Side Computing Network**Robert Grimm, Guy Lichtman, Nikolaos Michalakis, Amos Elliston, Adam Kravetz, Jonathan Miller, and Sajid Raza, *New York U.***Connection Conditioning: Architecture-Independent Support for Simple, Robust Services**KyoungSoo Park and Vivek S. Pai, *Princeton U.***PCP: Efficient Endpoint Congestion Control**Thomas Anderson, Andrew Collins, Arvind Krishnamurthy, and John Zahorjan, *U. of Washington*

Noon–1:30 p.m. Symposium Luncheon

1:30 p.m.–3:00 p.m.

**Measurement and Analysis**

Session Chair: John Byers

**Availability of Multi-Object Operations**Haifeng Yu and Phillip B. Gibbons, *Intel Research Pittsburgh*; Suman Nath, *Microsoft Research***Subtleties in Tolerating Correlated Failures**Suman Nath, *Microsoft Research*; Haifeng Yu and Phillip B. Gibbons, *Intel Research Pittsburgh*; Srinivasan Seshan, *Carnegie Mellon University***Closed Versus Open System Models and Their Impact on Performance**Bianca Schroeder, Adam Wierman, and Mor Harchol-Balter, *Carnegie Mellon University*

3:00 p.m.–3:30 p.m. Break

3:30 p.m.–5:30 p.m.

**Architectures and Abstractions (and Email)**

Session Chair: Alex Snoeren

**An Architecture for Internet Data Transfer**Niraj Tolia, *Carnegie Mellon University*; Michael Kaminsky, *Intel Research Pittsburgh*; David G. Andersen and Swapnil Patil, *Carnegie Mellon University***OCALA: An Architecture for Supporting Legacy Applications Over Overlays**D. Joseph and J. Kannan, *University of California, Berkeley*; A. Kubota, *KDDI Labs*; K. Lakshminarayanan and I. Stoica, *University of California, Berkeley*; K. Wehrle, *U. of Tübingen***Distributed Quota Enforcement for Spam Control**Michael Walfish, J.D. Zamburescu, Hari Balakrishnan, and David Karger, *MIT Computer Science and Artificial Intelligence Laboratory*; Scott Shenker, *University of California, Berkeley*, and *ICSI***Re: Reliable Email**Scott Garriss, *Carnegie Mellon University*; Michael Kaminsky, *Intel Research Pittsburgh*; Michael J. Freedman, *New York University*; Brad Karp, *University College London*; David Mazières, *Stanford University*; Haifeng Yu, *Intel Research Pittsburgh/Carnegie Mellon University***WEDNESDAY, MAY 10**

8:30 a.m.–10:00 a.m.

**Wireless and Sensor Networks**

Session Chair: Matt Welsh

**PRESTO: Feedback-driven Data Management in Sensor Networks**Ming Li, Deepak Ganesan, and Prashant Shenoy, *U. of Massachusetts***Practical Data-Centric Storage**Cheng Tien Ee, *University of California, Berkeley*; Sylvia Ratnasamy, *Intel Research Berkeley*; Scott Shenker, *ICSI and University of California, Berkeley***Geographic Routing Without Planarization**Ben Leong, Barbara Liskov, and Robert Morris, *MIT*

10:00 a.m.–10:30 a.m. Break

10:30 a.m.–noon

**File and Storage Systems**

Session Chair: John Hartman

**Ventana: A Distributed Filesystem for Virtual Machine Based Computing Environments**Ben Pfaff, Tal Garfinkel, and Mendel Rosenblum, *Stanford University***Olive: Distributed Point-in-Time Branching Storage for Real Systems**Marcos K. Aguilera, Susan Spence, and Alistair Veitch, *Hewlett-Packard Laboratories***Pastwatch: A Distributed Version Control System**Alexander Yip, Benjie Chen, and Robert Morris, *MIT Computer Science and AI Laboratory*