

# USITS '03

4th USENIX Symposium  
on Internet Technologies  
and Systems

March 26–28, 2003

WestCoast  
Grand Hotel  
Seattle, WA



## Register by March 3, 2003, and SAVE!

Join researchers and engineers at the cutting edge of Internet applications, technologies, and systems for the 4th USENIX Symposium on Internet Technologies and Systems (USITS '03).

- Learn from the latest research in Internet technologies and systems, including:
  - Resource management and scheduling
  - Web servers and CDNs
  - Novel Web architectures
  - Distributed systems and services
  - Security
- Hear what keynote speaker David Culler, UC Berkeley and Intel Research, has discovered from his research on Internet systems at the extremes.
- Get a preview of next year's results, and present your own work for critical feedback in the Work-in-Progress reports.

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# USENIX

The Advanced Computing  
Systems Association

## CONFERENCE ORGANIZERS

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Amin Vahdat, *Duke University*  
Geoff Voelker, *University of California, San Diego*  
Dan Wallach, *Rice University*

## HOTEL & REGISTRATION

### Hotel Information

**Hotel Reservation Discount Deadline: March 3, 2003**

WestCoast Grand Hotel

1415 Fifth Avenue

Seattle, WA 98101

Telephone: +1.206.971.8000

Rate: \$142 single/double

All requests for reservations received after the deadline will be handled on a space-available basis.

### Technical Registration Fees

#### Online Early Bird Rates

**(register online by March 3, 2003)**

Member: \$695

Nonmember: \$805

Student Member: \$260

Student Nonmember: \$300

The Nonmember rates include USENIX membership.

\$50 will be added to the above rates if registering by fax or mail.

#### Rates after March 3, 2003

Member: \$845

Nonmember: \$955

Student Member: \$260

Student Nonmember: \$300

The Nonmember rates include USENIX membership.

\$50 will be added to the above rates if registering by fax or mail.

### Register Online:

**<http://www.usenix.org/usits03>**

### Questions?

Telephone: + 1.510.528.8649

Fax: + 1.510.548.5738

Email: [conference@usenix.org](mailto:conference@usenix.org)

**WEDNESDAY, MARCH 26****9:00 a.m. – 10:30 a.m.****OPENING REMARKS, AWARDS, KEYNOTE****Keynote Address****PlanetLab: An Open, Community-Driven Infrastructure for Experimental Planetary-Scale Services**David E. Culler, *University of California, Berkeley, and Intel Research*

Network systems researchers have generated a host of ideas for distributed services that spread across the Internet, following the emergence of CDNs and P2P file sharing, but have had only limited means to try them out. PlanetLab builds upon a confluence of several maturing technologies, including remote cluster management, virtual machines, overlay routing, and resource containers, to provide a wide-area testlab for deployment and instrumentation of novel services. Services are deployed as a “slice” of distributed virtual machines. Intel Research seeded the initial phase of 101 nodes at 42 sites across 7 countries. The community is progressively redefining the architecture as a set of distributed services as it grows towards thousands of nodes.

**10:30 a.m. – 11:00 a.m. Break****11:00 a.m. – 12:30 p.m.****ROBUSTNESS**Session Chair: Mike Dahlin, *University of Texas at Austin***Why Do Internet Services Fail, and What Can Be Done About It?**David Oppenheimer, Archana Ganapathi, and David A. Patterson, *University of California, Berkeley***Using Fault Injection and Modeling to Evaluate the Performability of Cluster-Based Services**Kiran Nagaraja, Xiaoyan Li, Ricardo Bianchini, Richard P. Martin, and Thu D. Nguyen, *Rutgers University***Mayday: Distributed Filtering for Internet Services**David Andersen, *Massachusetts Institute of Technology***12:30 p.m. – 2:30 p.m. Symposium Luncheon****2:30 p.m. – 4:00 p.m.****RESOURCE MANAGEMENT AND SCHEDULING**Session Chair: Armando Fox, *Stanford University***Adaptive Overload Control for Busy Internet Servers**Matt Welsh, *Intel Berkeley Research*, and David E. Culler, *University of California, Berkeley, and Intel Research***Model-Based Resource Provisioning in a Web Service Utility**Ron Doyle, *IBM*; Jeff Chase, Omer Asad, and Amin Vahdat, *Duke University***Conflict-Aware Scheduling for Dynamic Content Applications**Cristiana Amza, Alan L. Cox, and Willy Zwaenepoel, *Rice University***4:00 p.m. – 4:30 p.m. Break****4:30 p.m. – 5:30 p.m.****WEB SERVERS AND CDNS**Session Chair: Vivek Pai, *Princeton University***FastReplica: Efficient Large File Distribution Within Content Delivery Networks**Ludmila Cherkasova, *Hewlett-Packard Laboratories*, and Jangwon Lee, *University of Texas at Austin***Energy Conservation Policies for Web Servers**Elmootazbellah Elnozahy, Mike Kistler, and Ramakrishnan Rajamony, *IBM Austin Research Lab***THURSDAY, MARCH 27****9:00 a.m. – 10:00 a.m.****INVITED TALK**Michael Luby, *CTO of Digital Fountain, Inc.***10:00 a.m. – 10:30 a.m. Break****THURSDAY, MARCH 27 (continued)****10:30 a.m. – 12:00 noon****DHTS AND OVERLAYS**Session Chair: Geoff Voelker, *University of California, San Diego***SkipNet: A Scalable Overlay Network with Practical Locality Properties**Nicholas J. A. Harvey and Michael B. Jones, *Microsoft Research*; Stefan Saroiu, *University of Washington*; Marvin Theimer and Alec Wolman, *Microsoft Research***Symphony: Distributed Hashing in a Small World**Gurmeet Manku and Mayank Bawa, *Stanford University*; Prabhakar Raghavan, *Verity, Inc.***A Study of the Performance Potential of DHT-based Overlays**Sushant Jain, Ratul Mahajan, and David Wetherall, *University of Washington***12:00 noon – 2:00 p.m. Lunch (on your own)****2:00 p.m. – 3:30 p.m.****WORK-IN-PROGRESS REPORTS**Session Chair: Peter Honeyman, *CITI, University of Michigan*

Short, pithy, and fun, Work-in-Progress reports introduce interesting new or ongoing work. If you have work you would like to share or a cool idea that's not quite ready for publication, send a one- or two-paragraph summary to [usits03wips@usenix.org](mailto:usits03wips@usenix.org). A schedule of presentations will be posted at the conference, and the speakers will be notified in advance.

**3:30 p.m. – 4:00 p.m. Break****4:00 p.m. – 5:30 p.m.****NOVEL WEB ARCHITECTURES**Session Chair: Amin Vahdat, *Duke University***Moving Edge Side Includes to the Real Edge—the Clients**Michael Rabinovich and Zhen Xiao, *AT&T Labs*; Fred Dougliis, *IBM Research*; Chuck Kalmanek, *AT&T Labs***A Flexible and Efficient Application Programming Interface (API) for a Customizable Proxy Cache**Vivek S. Pai, Alan L. Cox, Vijay S. Pai, and Willy Zwanepoel, *iMimic Networking, Inc.***A Non-Interfering Deployable Web Prefetching System**Ravi Kokku, Praveen Yalagandula, Arun Venkataramani, and Mike Dahlin, *University of Texas at Austin***7:00 p.m. – 9:00 p.m. Symposium Reception****FRIDAY, MARCH 28****9:00 a.m. – 10:00 a.m.****TRANSPORT AND SESSION LAYER**Session Chair: Srinivasan Seshan, *Carnegie Mellon University***Anypoint: Extensible Transport Switching on the Edge**Ken Yocum, Darrell Anderson, Jeff Chase, and Amin Vahdat, *Duke University***TESLA: A Transparent, Extensible Session-Layer Architecture for End-to-end Network Services**Jon Salz, Alex C. Snoeren, and Hari Balakrishnan, *Massachusetts Institute of Technology***10:00 a.m. – 10:30 a.m. Break****10:30 a.m. – 12:00 noon****DISTRIBUTED SYSTEMS AND SERVICES**Session Chair: Dan Wallach, *Rice University***Scriptroute: A Public Internet Measurement Facility**Neil Spring, David Wetherall, and Tom Anderson, *University of Washington***Network-aware Service Discovery**An-Cheng Huang and Peter Steenkiste, *Carnegie Mellon University***Using Random Subsets to Build Scalable Network Services**Dejan Kostic, Adolfo Rodriguez, Jeannie Albrecht, Abhijeet Bhirud, and Amin Vahdat, *Duke University*