Symposium Organizers

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Get the Program. See the quality. Join us at USITS '99.

URL: *http://www.usenix.org/events/usits99*

Important Date to Remember

Hotel & Pre-Registration Discount Deadline:
Friday, September 17, 1999

Program at a Glance

Sunday, October 10

6:00 pm – 9:00 pm	On-Site Registration
6:00 pm – 9:00 pm	Welcome Reception

Monday, October 11

7:30 am – 5:00 pm	On-Site Registration
9:00 am – 5:00 pm	Tutorial Program
12:30 pm – 1:30 pm	Tutorial Luncheon

Tuesday, October 12

7:30 am – 5:00 pm	On-Site Registration
9:00 am – 5:00 pm	Technical Sessions
12:30 pm – 2:00 pm	Symposium Luncheon
6:00 pm – 10:00 pm	Birds-of-a-Feather Sessions

Wednesday, October 13

7:30 am – 5:00 pm	On-Site Registration
9:00 am – 5:00 pm	Technical Sessions
6:00 pm – 8:00 pm	Symposium Reception
8:00 pm – 11:00 pm	Birds-of-a-Feather Sessions

Thursday, October 14

9:00 am – 12:30 pm	Technical Sessions

Questions?

USENIX Conference Office: 22672 Lambert Street, Suite 613, Lake Forest, CA 92630
Email: *conference@usenix.org*
Phone: 1.949.588.8649 **Fax:** 1.949.588.9706
URL: *http://www.usenix.org/*
Office hours: 8:30 am – 5:00 pm P.D.T.

"Hear, discuss, then put to use the latest research, well-thought-out approaches, and tools and techniques for practical Internet management and development."

Dear Colleague,

I invite you to the USENIX Symposium on Internet Technologies & Systems this October in Boulder, Colorado. This is where you will hear, discuss, then put to use the latest research, well-thought-out approaches, and tools and techniques for practical Internet management and development.

If you are looking for in-depth information about Internet technologies you will be able to use immediately, be sure to sign up for a tutorial on Monday the 11th. Choose among the four half-day courses, taught by experts, on Web Application Security; XML and Metadata for the Web; Intrusion Detection and Network Forensics; and An Introduction to Virtual Private Networks (Secure Networking). Detailed descriptions start on page 5.

Udi Manber, who has contributed such useful tools as *agrep* and *glimpse* to our community, will present the keynote address. He recently became Chief Scientist at Yahoo! and will tell us his view of the technical challenges in supporting Electronic Commerce.

The technical track runs all day Tuesday and Wednesday, concluding Thursday at 12:30 p.m. You'll find important papers on distributed caching and Web server performance, together with reports on proxy caching, server implementation and architecture, applications, prefetching, and interesting tools and techniques. The Program Committee had the pleasure of selecting 22 excellent papers, the best among 67 high-quality submissions. There is also a Work-in-Progress session with reports of recent work not quite ready for publication.

Meet colleagues with similar interests at the Birds-of-a-Feather Sessions or present your own Work-in-Progress. (For details on how to propose a talk, please see this page, "Activities and Services.") The hosted luncheon and reception will offer pleasant opportunities, among the many you'll find during the Symposium, to enjoy stimulating discussion with others working in areas like your own.

Please join us in Boulder this October 11–14.

Sincerely,

Fred Douglis

Fred Douglis, AT&T Labs–Research
Program Chair

P.S.: Remember to sign up for tutorials early. You'll get your first choice and save some money. Space is limited and classes do fill up.

Symposium Activities and Services

Student Stipends and Discounts

Technical Sessions

USENIX offers full-time students a special discount rate of $75 for its technical sessions program. You must include a copy of your current student I.D. card with your registration. This special fee is not transferable.

Student Stipends

A limited number of student stipends are available to pay for travel, living expenses, and registration fees to enable full-time students to attend the symposium. To apply for a stipend, read *comp.org.usenix* 6 to 8 weeks before the symposium, visit our Web site at *http://www.usenix.org/students/*, or email *students@usenix.org* for more information.

Birds-of-a-Feather Sessions (BoFs)

Tuesday and Wednesday evenings, October 12 and 13

Do you have a topic you'd like to discuss with others? Our Birds-of-a-Feather sessions may be perfect for you. BoFs are very interactive and informal gatherings for attendees interested in a particular topic. Schedule your BoF in advance by calling the USENIX Conference Office at 1.949.588.8649 or emailing *conference@usenix.org*.

Work-in-Progress Reports

Short, pithy, and fun, Works-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, contact the WIPS coordinators via email at *usits99wips@usenix.org*. We are particularly interested in presenting students' work. A list of topics is announced on-site.

Symposium Proceedings

One copy of the Proceedings is included with your Technical Sessions registration fee. To order additional copies, call the USENIX Association at 1.510.528.8649 or send email to *office@usenix.org*.

Social Activities

Meet the symposium speakers and connect with your peers in the community.

There will be a Welcome Reception on Sunday evening, a luncheon for tutorial participants on Monday, a luncheon for all Symposium attendees on Tuesday, and a Symposium Reception on Wednesday evening.

Gain command of the newest Internet tools and put them to work in your organization immediately.

To meet your needs, the Tutorial Program at USITS '99 provides you with in-depth, immediately useful instruction in Internet techniques, effective tools, and best strategies.

USENIX tutorials survey the topic, then dive right into the specifics of what to do and how to do it. Instructors are well-known experts in their fields, selected for their ability to teach complex subjects. Attend the USENIX tutorials at USITS '99 and take valuable skills back to your company or organization.

Our guarantee: If you're not happy, we're not happy. If you feel a tutorial does not meet the high standards you have come to expect from USENIX, let us know by the first break and we will change you to any other available tutorial immediately.

Continuing Education Units

USENIX provides Continuing Education Units (CEUs) for a small additional administrative fee. The CEU is a nationally recognized standard unit of measure for continuing education and training and is used by thousands of organizations. Each full day of USENIX tutorials qualifies for 0.6 CEUs. You can request CEU credit by completing the CEU section on the registration form. USENIX provides a certificate for each attendee taking a tutorial for CEU credit and maintains transcripts for all CEU students. CEUs are not the same as college credits. Consult your employer or school to determine their applicability.

Register now to guarantee your first choice. Seating is limited.

Stay on top of the latest technology. Register now for tutorials.

Tutorial Overview

Each tutorial runs from 9:00 am to 12:30 pm or from 1:30 pm to 5:00 pm. Please select one morning and one afternoon tutorial. Sorry, no partial registrations are allowed.

Morning Sessions: 9:00 am – 12:30 pm

M1 am Web Application Security
Mark-Jason Dominus, *Consultant*

M2 am XML and Metadata for the Web
Neel Sundaresan, *IBM Almaden Research Center*

Afternoon Sessions: 1:30 pm – 5:00 pm

M3 pm Intrusion Detection and Network Forensics
Marcus J. Ranum, *Network Flight Recorder, Inc.*

M4 pm An Introduction to Virtual Private Networks (Secure Networking)
Tina Bird, *Secure Networking Group*

Tutorial fees include:

- **Admission to the tutorials you select**
- **Lunch**
- **Printed and bound tutorial materials from your sessions**

M1 am **Web Application Security**

Mark-Jason Dominus, *Consultant*

Who should attend: Programmers and managers involved in the development of CGI programs and other applications designed to deliver dynamic or interactive content on the Web, and system administrators of Web servers. Participants should have some experience in developing these applications.

Interactive content on the Web is the world's biggest computer security hole. Before the invention of the WWW, sane system administrators would never have considered setting up a network service that allowed an anonymous user to execute a complex program on their systems. Nevertheless, that is exactly what the Web does. Programs of formidable complexity and power are executed thousands of times every day on your systems, by unknown users in unknown locations with no supervision. If these programs are not written with great care, they can be subverted and used to steal your information or vandalize your machine.

The tutorial will include a number of case studies of programs that appear safe but aren't, and will show why "eyeball" methods of program verification are ineffective. We will spend some time discussing common problems and oversights and will show how they can be avoided. The examples will be in the Perl programming language, but the problems are not language-specific and most of the solutions apply to programs written in any language. The tutorial will, however, spend some time discussing the unique "tainting" feature of Perl, which can detect many of these problems automatically.

We will examine the common programming error of trusting the browser, including improper use of cookies and client-side data validation. Additionally, we will take a close look at the strengths and weaknesses of authentication systems commonly used on the Web. Along the way, the tutorial will present important basic principles of security, with an emphasis on developing a sound security policy that is effective for your situation.

M2 am **XML and Metadata for the Web**

Neel Sundaresan, *IBM Almaden Research Center*

Who should attend: Programmers, managers, and architects involved in the use of XML for Internet applications. Participants should have some exposure to Java and to new developments in the Web arena. They will come away from this tutorial with practical information on XML and related metalanguages, tools that work with them, and how to use these technologies to build Internet applications.

This tutorial emphasizes XML-based data and metadata facilities for the Web.

Topics covered include:

- Introduction to XML
- Processing XML
  - Parsing and searching
  - DOM, SAX models
- XML-related technologies and languages
- XML tools and applications using Java
- Metadata for the Web
  - RDF as a metadata language
  - RDF tools using Java

M3 pm **Intrusion Detection and Network Forensics**

Marcus J. Ranum, *Network Flight Recorder, Inc.*

Who should attend: Network and system managers, security managers, and auditors. This tutorial assumes some knowledge of TCP/IP networking and client/server computing.

What can intrusion detection do for you? Intrusion-detection systems are designed to alert network managers to the presence of unusual or possibly hostile events within the network. Once you've found traces of a hacker, what should you do? What kind of tools can you deploy to determine what happened, how they got in, and how to keep them out? This tutorial provides a highly technical overview of the state of

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intrusion-detection software and the types of products that are available, as well as the basic principles to apply in building your own intrusion-detection alarms. Methods of recording events during an intrusion are also discussed.

Topics covered include:

- What is IDS?
  - Principles
  - Prior art
- Can IDS help?
  - What IDS can do for you
  - What IDS can't do for you
  - IDS and the WWW
  - IDS and firewalls
  - IDS and VPNs
- Types and trends in IDS design
  - Anomaly detection
  - Misuse detection
  - Traps
  - Future avenues of research
- Concepts for building your IDS
  - What you need to know first
  - Performance issues
- Tools for building your IDS
  - Sniffers and suckers
  - Host logging tools
  - Log recorders
- Reporting and recording
  - Managing alerts
  - What to throw away
  - What to keep
- Network forensics
  - So you've been hacked
  - Forensic tools
  - Brief overview of evidence handling
  - Who can help you
- Resources and references

M4 pm An Introduction to Virtual Private Networks (Secure Networking)

Tina Bird, *Secure Networking Group*

Who should attend: System administrators and network managers responsible for remote access and wide-area networks within their organization. Participants should be familiar with TCP/IP networking and fundamental network security, although some review is provided. The purpose of this tutorial is to provide a step-by-step guide to evaluating an organization's VPN requirements, selecting the appropriate technology, and implementing it within a preexisting security infrastructure.

Virtual private networking technology provides a flexible mechanism for addressing connectivity needs within many organizations. This tutorial focuses on assessing business and technical requirements for remote access and extranet connections; evaluating VPN technology; integrating VPNs within an existing network infrastructure; and common implementation difficulties.

Topics covered include:

- VPN security features (encryption, access control, NAT) and how they protect against common Internet threats
- Assessing your organization's needs for remote access
- VPN architectures and where they fit
- A brief review of commercial VPN products

About the Instructors

Tina Bird is a security analyst at Secure Networking Group, a consulting firm in Lawrence, Kansas, that specializes in the installation and management of secure wide-area networks. She has implemented and managed a variety of wide-area-network security technologies, such as firewalls and VPN packages; built and supported extranet and intranet remote access packages; and developed, implemented, and enforced corporate IS security policies in a variety of environments. Her main focus in the past year has been on the evaluation and implementation of virtual private networking solutions in small- to mid-sized networks (40 to 4000 hosts). Tina is the moderator of the Virtual Private Networks mailing list. She has a B.S. in physics from Notre Dame and an M.S. and Ph.D. in astrophysics from the University of Minnesota.

Mark-Jason Dominus has been involved in computer security since 1988 and has been developing interactive Web applications since 1994. He was a system administrator and the first Webmaster at the University of Pennsylvania's Department of Computer and Information Sciences. He then became a founding staff member of Pathfinder, Time-Warner's Internet Web service, where he was the leader of the system administration and network security group. He is now an independent consultant working in the area of dynamic application development and systems and security analysis. He writes a regular column for *The Perl Journal.*

Marcus J. Ranum is CEO and founder of Network Flight Recorder, Inc. He is the principal author of several major Internet firewall products, including the DEC SEAL, the TIS Gauntlet, and the TIS Internet Firewall Toolkit. Marcus has been managing UNIX systems and network security for over 14 years, including configuring and managing *whitehouse.gov.* Marcus is a frequent lecturer and conference speaker on computer security topics.

Neel Sundaresan is a research staff member of the Web technologies group at the IBM Almaden Research Center. He is a lead architect of the Grand Central Station, a large-scale Web application project, and has been working with XML and RDF for the past two years. He wrote IBM's RDF for the XML processor in Java and has led several research efforts in XML at IBM Research. He offers tutorials related to leading-edge technologies and has published research papers at several national and international conferences and workshops. He is a member of the W3C RDF Schema working group.

TUESDAY, October 12

9:00 am – 9:15 am — Opening Remarks

Fred Douglis, Program Chair, *AT&T Labs—Research*

9:15 am – 10:30 am — Keynote Address

E-Commerce—An Optimistic View

Udi Manber, *Yahoo! Inc.*

Will E-commerce change the world? Yes.

Do we know how? No.

Are there any interesting unsolved technical and other problems? In abundance.

Udi Manber, winner of the 1999 Annual Software Tools Users Group award, is Chief Scientist at Yahoo!. Before joining Yahoo! in 1998, he was a professor of computer science at the University of Arizona. He wrote more than 50 technical articles, 3 of which won best paper awards; co-developed Agrep, Glimpse, Harvest, and the Search Broker; and wrote a popular textbook on design of algorithms.

10:30 am – 11:00 am — Break

11:00 am – 12:30 pm — Shared Caching

Session Chair: P. Krishnan, *Bell Labs, Lucent Technologies*

Scalable Web Caching of Frequently Updated Objects Using Reliable Multicast
Dan Li and David R. Cheriton, *Stanford University*

Hierarchical Cache Consistency in a WAN
Jian Yin, Lorenzo Alvisi, Mike Dahlin, and Calvin Lin, *University of Texas at Austin*

Organization-Based Analysis of Web-Object Sharing and Caching
Alec Wolman, Geoff Voelker, Nitin Sharma, Neal Cardwell, Molly Brown, Tashana Landray, Denise Pinnel, Anna Karlin, and Henry Levy, *University of Washington*

12:30 pm – 2:00 pm — Symposium Luncheon

2:00 pm – 3:30 pm — Applications

Session Chair: Terence Kelly, *Microsoft Research* and *University of Michigan*

The Ninja Jukebox
Ian Goldberg, Steven D. Gribble, David Wagner, and Eric A. Brewer, *University of California at Berkeley*

Cha-Cha: A System for Organizing Intranet Search Results
Mike Chen, Jason Hong, James Lin, and Marti Hearst, *University of California at Berkeley*

A Document-based Framework for Internet Application Control
Todd D. Hodes and Randy H. Katz, *University of California at Berkeley*

3:30 pm – 4:00 pm — Break

4:00 pm – 5:00 pm — Techniques

Session Chair: Eric A. Brewer, *University of California at Berkeley* and *Inktomi*

Sting: A TCP-based Network Measurement Tool
Stefan Savage, *University of Washington*

JPEG Compression Metric as a Quality-Aware Image Transcoding
Surendar Chandra and Carla Schlatter Ellis, *Duke University*

WEDNESDAY, October 13

9:00 am – 10:30 am — Proxy Implementation

Session Chair: Jeffrey Mogul, *Compaq Western Research Laboratory*

Secondary Storage Management for Web Proxies
Evangelos P. Markatos, Manolis G.H. Katevenis, Dionisis Pnevmatikatos, and Michail Flouris, *ICS—FORTH*

Compression Proxy Server: Design and Implementation
Chi-Hung Chi, Jing Deng, and Yan-Hong Lim, *National University of Singapore*

On the Performance of TCP Splicing for URL-Aware Redirection
Ariel Cohen, Sampath Rangarajan, and Hamilton Slye, *Bell Laboratories*

10:30 am – 11:00 am — Break

11:00 am – 12:00 pm — Prefetching

Session Chair: Geoffrey H. Kuenning, *Harvey Mudd College*

Prefetching Hyperlinks
Dan Duchamp, *AT&T Labs—Research*

Mining Longest Repeating Subsequences to Predict WWW Surfing
Jim Pitkow and Peter Pirolli, *Xerox PARC*

12:00 pm – 1:30 pm — Lunch (on your own)

1:30 pm – 3:00 pm — Architectures

Session Chair: David B. Johnson, *Carnegie Mellon University*

Active Names: Flexible Location and Transport of Wide-Area Resources
Amin Vahdat, *Duke University;* Michael Dahlin, *University of Texas at Austin;* Thomas Anderson and Amit Aggarwal, *University of Washington*

Person-level Routing in the Mobile People Architecture
Mema Roussopoulos, Petros Maniatis, Edward Swierk, Kevin Lai, Guido Appenzeller, and Mary Baker, *Stanford University*

A User's and Programmer's View of the New JavaScript Security Model
David M. Kristol and Alain Mayer, *Bell Labs*

3:00 pm – 3:30 pm — Break

3:30 pm – 5:00 pm — Work-in-Progress Reports

Session Chair: Peter Honeyman, *CITI, University of Michigan*

THURSDAY, October 14

9:00 am – 10:30 am — Caching Policies

Session Chair: Katia Obraczka, *University of Southern California Information Sciences Institute*

Using Full Reference History for Efficient Document Replacement in Web Caches
Hyokyung Bahn, *Seoul National University;* Sam H. Noh, *Hong-Ik University;* Kern Koh and Sang Lyul Min, *Seoul National University*

Providing Dynamic and Customizable Caching Policies
J. Fritz Barnes and Raju Pandey, *University of California at Davis*

Exploiting Result Equivalence in Caching Dynamic Web Content
Ben Smith, Anurag Acharya, and Tao Yang, *University of California at Santa Barbara*

10:30 am – 11:00 am — Break

11:00 am – 12:30 pm — Server Implementation

Session Chair: Fred Douglis, *AT&T Labs—Research*

Efficient Support for Content-based Routing in Web Server Clusters
Chu-Sing Yang and Mon-Yen Luo, *National Sun Yat-Sen University*

Rapid Reverse DNS Lookups for Web Servers
William LeFebvre, *Group sys Consulting;* Ken Craig, *CNN Internet Technologies*

Connection Scheduling in Web Servers
Mark Crovella and Robert Frangioso, *Boston University;* Mor Harchol-Balter, *MIT Laboratory for Computer Science*

About USENIX

Since 1975, the USENIX Association has brought together the community of engineers, system administrators, scientists, and technicians working on the cutting edge of computing. USENIX conferences are the essential meeting grounds for the presentation and discussion of the newest information on the technical developments in computing.

USENIX and its members are dedicated to:

- Problem-solving with a practical bias
- Fostering innovation that works
- Communicating rapidly the results of both research and innovation
- Providing a neutral forum for the exercise of critical thought and the airing of technical issues

SAGE, the System Administrators Guild, is a special technical group within USENIX. To join SAGE, you must be a member of USENIX. SAGE is an international membership society dedicated to the recognition and advancement of the system administration profession.

USENIX Website: *http://www.usenix.org/*

The USENIX Association
2560 Ninth Street, Suite 215
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Email: *office@usenix.org*

About the IEEE Computer Society Technical Committee on the Internet (TCI)

The IEEE-CS Technical Committee on the Internet promotes internetworking technologies, such as the World Wide Web, from a software perspective. Goals of the TCI are to sponsor high-quality workshops and conferences, provide timely information to CS members via Web pages (electronic bulletin), and influence and promote internetworking standards. Internetworking is exceptionally important commercially and as a research vehicle. Other related IEEE Technical Committees include: Operating Systems, Computer Communications, Distributed Processing, Multimedia, Security and Privacy, and Data Engineering.

TC on the Internet
Fred Douglis, Chair
Email: *douglis@research.att.com*
TCI Website: *http://computer.org/tab/TCI/*

Upcoming USENIX Events

8th USENIX Security Symposium
In cooperation with The CERT Coordination Center
August 23-26, 1999
JW Marriott Hotel, Washington, D.C., USA
http://www.usenix.org/events/sec99/

2nd Conference on Domain-Specific Languages (DSL '99)
In cooperation with ACM SIGPLAN and SIGSOFT
October 3-5, 1999
Omni Hotel, Austin, Texas, USA
http://www.usenix.org/events/dsl99/

13th Systems Administration Conference (LISA '99)
Sponsored by SAGE, The System Administrators Guild
November 7–12, 1999
Seattle Convention Center, Seattle, Washington, USA
http://www.usenix.org/events/lisa99/

7th USENIX Tcl/Tk Conference (Tcl/2k)
February 14–18, 2000
The Marriott Hotel, Austin, Texas, USA
http://www.usenix.org/events/tcl2k/

SANS 2000 — 9th Annual System Administration, Networking, and Security Conference
Co-sponsored by the SANS Institute and SAGE
March 21-27, 2000
Orlando, Florida, USA
http://www.sans.org/

2000 USENIX Annual Technical Conference
June 18–23, 2000
San Diego Marriott Hotel & Marina
San Diego, California, USA
http://www.usenix.org/events/usenix2000/

4th Symposium on Operating System Design & Implementation (OSDI 2000)
Co-sponsored by IEEE TCOS and ACM SIGOPS
October 23-25, 2000
Paradise Point Resort, San Diego, California, USA
http://www.usenix.org/events/osdi2000/

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USENIX Supporting Members: C++ Users Journal • Cirrus Technologies • Cisco Systems, Inc. • CyberSource Corporation • Deer Run Associates • Greenberg News Networks/MedCast Networks • Hewlett-Packard India Software Operations • Internet Security Systems, Inc. • Microsoft Research • MKS, Inc. • Motorola Australia Software Centre • Neosoft, Inc. • New Riders Press • Nimrod AS • O'Reilly & Associates, Inc. • Performance Computing • Questra Consulting • Sendmail, Inc. • Server/Workstation Expert • TeamQuest Corporation • UUNET Technologies, Inc. • Windows NT Systems Magazine • WITSEC, Inc.

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Thank you

Hotel and Early Registration Discount Deadline: *Friday, September 17, 1999*

Hotel and Travel Information

USENIX has negotiated special rates for symposium attendees at the Regal Harvest House Hotel. Contact the hotel directly to make your reservation. You must mention USENIX to get the special rate. A one-night room deposit must be guaranteed to a major credit card. To cancel your reservation, you must notify the hotel at least 24 hours before your planned arrival date.

Regal Harvest House Hotel
1345 Twenty-Eighth Street
Boulder, Colorado 80302
Toll-free: 1.800.545.6285
Local telephone: 1.303.443.3850
Reservation fax: 1.303.443.1480 — Attn.: Reservations

Single/Double Occupancy $115.00
(plus state and local taxes, currently 9.7%)

Note: All requests for hotel reservations made after the September 17 deadline will be handled on a space-available basis at the hotel's standard rate.

Getting to Boulder

Fly to the Denver International Airport (DIA), which is about 50 miles southeast of Boulder. Boulder itself contains no commercial airport. All major car rental companies are open 24 hours/day at DIA.

Discount Airfares

Special airline discounts are available for USENIX attendees. Please call for details:

JNR, Inc.
Toll-free in U.S. and Canada: 1.800.343.4546
Telephone: 1.949.476.2788

Shuttle Service

Super Shuttle offers transportation to Boulder every hour on the hour, every day, from 8 am to 11 pm. Current cost is $18 each way. Get your Super Shuttle ticket on Level 5 (the ground transportation center). The Super Shuttle desk is located near a "giant" Hertz Car Rental agency.

Boulder Yellow Cab

Exit from Level 5 at the airport and look for Boulder Yellow Cabs. Taxis are currently a fixed rate of $70 one way for up to 5 persons.

Points of Interest in Boulder

Within easy driving distance of Boulder, world-renowned ski resorts, national parks, and other attractions abound. Under 50km away are Rocky Mountain National Park and Eldora Mountain Ski Area.

Perl Street Mall, Boulder's hub for shopping and dining, is situated on a four-block pedestrian-only site. The mall includes a variety of outdoor cafes, restaurants, and coffee houses. Street performers enliven the mall's atmosphere day and night.

Questions?

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Office hours:
8:30 am – 5:00 pm P.D.T.

Registration Information

Tutorial Fees (October 11, 1999)

Tutorial registration fees include:

- Admission to the tutorials you select
- Printed and bound tutorial materials for your selected courses
- Lunch

Early registration fee (until September 17, 1999)

Select one am and one pm tutorial.
Sorry, no half-day registration allowed.

Tutorial program for one day	$395
CEU credit for one full day	$ 15

After September 17, add $50 to the tutorial fee.

Technical Sessions Fees (October 12-14, 1999)

Technical Session registration fees include:

- Admission to all technical sessions
- Copy of Symposium Proceedings
- Admission to Symposium Luncheon and Reception

Early registration fee (until September 17, 1999)

Member*	$400
Non-member**	$480
Full-time student	$ 75

(must provide copy of current student I.D. card)

Members and Non-members: After September 17, add $50 to the Technical Sessions fee.

** The member fee applies to current members of USENIX, EurOpen national groups, JUS, AUUG, or IEEE–CS.*

***Join USENIX or renew your membership at no additional charge. Pay the non-member technical sessions fee and check the USENIX membership box on the registration form, and your existing membership will be renewed or you will receive a new one-year individual association membership.*

Payment by check or credit card must accompany the registration form. Purchase orders, vouchers, or telephone registrations cannot be accepted.

REFUND / CANCELLATION POLICY
If you must cancel, all refund requests must be in writing with your signature, and postmarked no later than October 1, 1999. Telephone and email cancellations cannot be accepted. You may fax your cancellation or substitute another in your place. Call the Conference Office for details: 1.949.588.8649.

Registration Form

2nd USENIX Symposium on Internet Technologies and Systems
USITS '99 October 11-14, 1999

Copy this form as needed. Type or print clearly.

The address you provide will be used for all future USENIX mailings unless you notify us in writing.

Name First Last

First Name for Badge Member Number

Company / Institution

Mail Stop Mail Address

City State Zip Country

( ) ( )
Telephone No. Fax

Email Address (1 only please)

IMPORTANT: If there is a mailing label (see other side), please tell us the single letter in the upper right corner (2nd line): _____

Attendee Profile

Please help us meet your needs by answering the following questions. All information is confidential.

❑ I do not want to be on the Attendee list.
❑ I do not want my address made available except for USENIX mailings.
❑ I do not want USENIX to email me notices of Association activities.

What is your affiliation (check one):
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If you must cancel, all refund requests must be in writing with your signature, and postmarked no later than October 1, 1999. Telephone and email cancellations cannot be accepted. You may fax your cancellation or substitute another in your place. Call the Conference Office for details: 1.949.588.8649.

Tutorial Program

Select one am and one pm tutorial. Sorry, no half-day registration allowed.

Monday, October 11, 1999
Morning Sessions (9:00 am – 12:30 pm)
❑ M1 am Web Application Security
❑ M2 am XML and Metadata for the Web
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❑ M3 pm Intrusion Detection and Network Forensics
❑ M4 pm An Introduction to Virtual Private Networks (Secure Networking)

Tutorial Program Fees *(Monday, October 11)*

Tutorial program (two half-day tutorials)..... $395.00 $_____

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