

Register by
July 25 and save \$50

USENIX Windows NT Workshop

*The only workshop by and for
researchers using Windows NT*

Sponsored by the USENIX Association

*August 11–13, 1997
Sheraton Seattle Hotel
& Towers
Seattle, Washington*

Who Should Attend: *Researchers in any field of
computer science using or adopting Windows NT
as their research base*

FREE TO ALL ATTENDEES:

*Windows NT in a Nutshell—
A Desktop Quick Reference for
System Administration*
by Eric Pearce, with
Beverly Scherf and
Chris Reilly

Keynotes

- **Windows NT to the Max— Just How Far Can It Scale Up?**
Jim Gray, *Microsoft*
- **What a Tangled Mess! Untangling User-Visible Complexity in Windows Systems**
Rob Short, *Microsoft*
- **Operating System Security Meets the Internet**
Butler Lampson, *Microsoft*

Refereed Papers

- From UNIX to Windows NT
- Managing Executables
- Driver Tricks
- Performance
- Distributed Systems

Special Sessions

- Tools
- Do you need source?
- Building distributed applications:
CORBA and DCOM
- Case studies on porting
- Windows NT futures

*Plus lots more... Poster Sessions, Demos,
BoFs, Reception at the Seattle Aquarium*

USENIX

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USENIX Windows NT Workshop



Michael B. Jones



Ed Lazowska

Dear Colleague:

If you are a researcher actively using or planning to use Windows NT, the USENIX Windows NT Workshop will provide a forum to discuss ideas and share information, experiences, and results. While an increasing amount of research work is being done on Windows NT, until now there has been no common forum where researchers could gather and learn from each other's work. This workshop is intended to address this need.

The workshop includes technical presentations of submitted position papers, invited talks, Birds-of-a-Feather sessions for highly-interactive focused discussions, demonstrations, a poster session, and a tutorial session. While proceedings will be published, the primary purpose of the workshop is to

facilitate three days of useful interaction among the participants—not to provide yet another specialized systems publication venue.

If you are using or adopting Windows NT as your research base, we strongly encourage you to attend and actively participate.

Very truly yours,

Michael B. Jones, *Microsoft Research*

Ed Lazowska, *University of Washington*

PS: Remember to register early and save \$50.

Program at a Glance

Sunday, August 10, 1997

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

Monday, August 11

On-Site Registration 7:30 am – 5:00 pm

Technical Sessions 9:00 am – 7:00 pm

Reception
at Seattle Aquarium 8:30 pm – 11:00 pm

Tuesday, August 12

On-Site Registration 7:30 am – 5:00 pm

Technical Sessions 9:00 am – 5:30 pm

Workshop Luncheon 12:00 pm – 1:30 pm

Demonstrations and Posters 7:00 pm – 10:00 pm

Birds-of-a-Feather Sessions 7:00 pm – 11:00 pm

Wednesday, August 13

Technical Sessions 9:00 am – 12:00 pm

Workshop Luncheon 12:00 pm – 1:30 pm

Birds-of-a-Feather Sessions 1:30 pm – 3:00 pm

Technical Sessions 3:30 pm – 5:00 pm

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Conference Organizers

Program Co-Chairs

Michael B. Jones, *Microsoft Research*
Ed Lazowska, *University of Washington*

Steering Committee

Trevor Mudge, *University of Michigan*
Margo Seltzer, *Harvard University*
Thorsten von Eicken, *Cornell University*

Program Committee

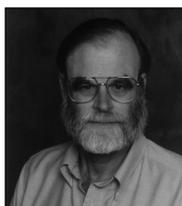
Tom Anderson, *University of California, Berkeley*
Bryant Bigbee, *Intel Corporation*
Bill Carpenter, *VenturCom, Inc.*
Anton Chernoff, *Digital Equipment Corporation*
J. Bradley Chen, *Harvard University*
Andrew A. Chien, *University of Illinois at Urbana-Champaign*
Jim Gray, *Microsoft Bay Area Research Center*
Carl Hauser, *Xerox Palo Alto Research Center*
Avi Mendelson, *Technion*
Trevor Mudge, *University of Michigan*
Richard Oehler, *IBM T.J. Watson Research Center*
Thorsten von Eicken, *Cornell University*

MONDAY, August 11
9:00am – 9:10am

Opening Remarks
Michael B. Jones, *Microsoft Research*
Ed Lazowska, *University of Washington*

9:10am – 10:10am

Keynote Address
Windows NT to the Max—Just How Far Can It Scale Up
Jim Gray, *Microsoft Bay Area Research Center*



Windows NT is a great file and print server. It also makes a good web, mail, and SQL server. But how does it behave when you attach several hundred disks to a single NT node and run a database application against it? What happens when you spread an application across thirty NT servers and a thousand disks? This talk describes some high-end applications built with NT, and describes some of the unsolved problems these applications present.

Jim Gray is a specialist in database and transaction processing computer systems. His research focuses on scaleable computing: building super-servers and workgroup systems from commodity software and hardware. He is editor of the Performance Handbook for Database and Transaction Processing Systems, and co-author of Transaction Processing Concepts and Techniques. He is a member of the National Academy of Engineering, Fellow of the ACM, editor-in-chief of the VLDB Journal, and editor of the Morgan Kaufmann series on Data Management.

10:10am – 10:30am

Break

10:30am – Noon

Refereed Paper Session: Mangling Executables

Instrumentation and Optimization of Win32/Intel Executables

Ted Romer, Geoff Voelker, Dennis Lee, Alec Wolman, Wayne Wong, Hank Levy, and Brian N. Bershad, *University of Washington*, J. Bradley Chen, *Harvard University*

DIGITAL FX!32—Running 32-Bit x86 Applications on Alpha NT

Anton Chernoff and Ray Hookway, *Digital Equipment Corporation*

Spike: An Optimizer for Alpha/NT Executables

Robert Cohn, David Goodwin, P. Geoffrey Lowney, and Norman Rubin, *Digital Equipment Corporation*

Improving Instruction Locality with Just-in-Time Code Layout

J. Bradley Chen and Bradley D. D. Leupen, *Harvard University*

Noon – 1:30pm

Lunch (on your own)

1:30pm – 3:00pm

Tutorial Session: Available Tools—A Guided Tour of the Win32 SDK, Windows NT Resource Kit, VTune, Etc.
K. Sridharan, *Intel* and others TBA

3:00pm – 3:30pm

Break

3:30pm – 5:00pm

Refereed Paper Session: Driver Tricks

The RTX Real-Time Subsystem for Windows NT

Bill Carpenter, Mark Roman, Nick Vasilatos, and Myron Zimmerman, *VenturCom, Inc.*

A Scheduling Scheme for Network Saturated NT Multiprocessors

Joergen Svaerke Hansen and Eric Jul, *DIKU*

Coordinated Thread Scheduling for Workstation Clusters Under Windows NT

Matt Buchanan and Andrew A. Chien, *UIUC*

Creating User-Mode Device Drivers with a Proxy

Galen C. Hunt, *University of Rochester*

5:00pm – 5:30pm

Break

5:30pm – 7:00pm

Panel Session: Do You Need Source?

This session will examine what you do and don't need Windows NT source code for as a researcher.

Speakers TBA.

8:30pm – 11:00pm

Dessert Reception, Seattle Aquarium

TUESDAY, August 12
9:00am – 10:00am



Keynote Address

What a Tangled Mess! Untangling User-Visible Complexity in Windows Systems

Rob Short, *Microsoft Corporation*

Today you can buy a Windows PC system from hundreds of manufacturers and choose from thousands of options and separate programs. However, the interactions between these components often result in havoc, with programs wiping out each other's files, and hardware devices configured with the same addresses or interrupt levels. End-users are faced with an encyclopedia of acronyms that are totally meaningless to many engineers, let alone the average homeowner trying to do their taxes.

I will describe work being done in the Windows NT operating system to bring order to this chaos, from the technical challenges of discovering and identifying hardware, to creating a simple user-interface for installing hardware and software, to managing thousands of systems with absolutely no end-user involvement at all.

10:00am – 10:30am

Break

10:30am – Noon

Refereed Paper Session: Performance

Measuring Windows NT—Possibilities and Limitations

Yasuhiro Endo and Margo Seltzer, *Harvard University*

Delivery of High-Quality Uncompressed Video over ATM to Windows NT Desktop

Sherali Zeadally, *University of Southern California*

Dreams in a Nutshell

Steven Sommer, *Microsoft Research Institute, Macquarie University*

Adding Response Time Measurement of CIFS File Server Performance to NetBench

Karl L. Swartz, *Network Appliance*

Noon – 1:30pm

Workshop Luncheon

1:30pm – 3:00pm

Invited Talks and Panel: Building Distributed Applications—CORBA and DCOM

This session will highlight the strengths and weakness of CORBA and DCOM for building real distributed applications. May also include distributed Java-related issues.

Speakers TBA

3:00pm – 3:30pm

Break

3:30pm – 4:15pm

Refereed Paper Session: Distributed Systems

Brazos: A Third Generation DSM System

Evan Speight and John K. Bennett, *Rice University*

Moving the Ensemble Groupware System to Windows NT and Wolfpack

K. Birman, W. Vogels, K. Guo, M. Hayden, T. Hickey, R. Friedman, S. Maffei, R. van Renesse, and A. Vaysburd, *Cornell University*

4:15pm – 5:30pm

Refereed Paper Session: We're Not in Kansas Anymore

Parallel Processing with Windows NT Networks

Partha Dasgupta, *Arizona State University*

OPENNT: UNIX Application Portability to Windows NT via an Alternative Environment Subsystem

Stephen Walli, *Softway Systems, Inc.*

Porting UNIX to Windows NT

David Korn, *AT&T Labs Research*

7:00pm – 10:00pm

Demonstrations and Posters

7:00pm – 11:00pm

Birds-of-a-Feather Sessions

WEDNESDAY, August 13
9:00am – 10:00am

Keynote Address Operating System Security Meets the Internet



Butler Lampson, *Microsoft*

Operating systems have had security for more than 30 years. Networks have had security for about 10 years. Today the two worlds meet only in network login. How can the operating system secure network applications? This requires embracing network notions of secure channels, identity, and group membership. It also requires extending systematic access control to many interfaces that are currently unprotected.

10:00am – 10:30am

Break

10:30am – Noon

Case Studies: Deep Ports

This session will describe the tradeoffs of porting substantial UNIX programs to Windows NT shallowly (keeping them as UNIX-like as possible) vs. deeply (taking advantage of Windows NT functionality as much as possible). Presentation will focus around case studies of real ported applications: the top-end transaction processing monitor and the Oracle database, with an additional case study to be announced.

Presenters: Steve Hagan and Ramu Sunkara *Oracle Corporation*, and Joe Fernandez, *NCR Corporation*

Noon – 1:30pm

Workshop Luncheon

1:30pm – 3:00pm

Birds-of-a-Feather Sessions

3:30pm – 5:00pm

Windows NT Futures

Frank Artale, Director, Windows NT Program Management, *Microsoft* and Felipe Cabrera, Windows NT Architect, *Microsoft*

USENIX is the UNIX and Advanced Computing Systems Association

Since 1975, USENIX has brought together the community of developers, programmers, system administrators, and architects working on the cutting edge of the computing world.

USENIX conferences have become the essential meeting grounds for the presentation and discussion of the most advanced information on new developments in all aspects of advanced computing systems.

The USENIX Association

2560 Ninth Street, Suite 215
Berkeley, CA 94710
Phone: 510.528.8649
Fax: 510.548.5738

Email: office@usenix.org

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

Mailservers: email to info@usenix.org

The body of your email message should say: "send catalog".

T H A N K Y O U

USENIX and SAGE Thank Their Supporting Members

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Registration Information

Usage Abstracts

Before your registration will be considered complete, you must submit a one-page abstract (400 words maximum) describing research you are doing or planning to do with Windows NT, unless you are the author of an accepted paper.

Email it to usenix-nt-abstracts@usenix.org with the subject "NT workshop usage abstract", in either ASCII or HTML (with no figures). If your HTML contains any non-ASCII characters, be sure to uencode or MIME encode it for transmission. The abstracts will be made available on the workshop Web site before the workshop and will also be distributed in paper form to attendees. The abstracts are intended to facilitate communication among attendees, helping people find others with similar interests or problems.

Please begin your abstract with your name, affiliation, and complete contact information including email and postal addresses, phone, and URL.

Registration Fees (August 11–13)

Early registration fee (until July 25)

Member*	\$380
Non-member**	\$450

Members and Non-members:
Add \$50 late fee after July 25, 1997

Full-time student	\$ 75
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(copy of student ID required)

*The member fee applies to current individual members of USENIX, EurOpen national groups, JUS and AUUG.

**Join USENIX or renew your membership. Pay the non-member registration fee and just check the USENIX membership box on the registration form to renew your existing membership or receive a one-year individual association membership.

REFUND / CANCELLATION POLICY If you must cancel, all refund requests must be in writing, with your signature, and postmarked no later than August 1, 1997. Telephone and email cancellations cannot be accepted. You may fax your cancellation or substitute another in your place. Contact the Conference Office for details: 714.588.8649.

Registration fees include:

- Admission to all Technical Sessions
- Copy of workshop proceedings
- Admission to the workshop luncheons and reception

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

Workshop Information

Discounts and Student Stipends

The USENIX student stipend program covers travel, living expenses, and registration fees to enable full-time students to attend USENIX conferences and workshops. To apply for a stipend, visit the USENIX Web site: <http://www.usenix.org>; read comp.org.usenix, or send email to students@usenix.org.

USENIX offers a discount rate of \$75 for full-time students. You must include a copy of your current student ID card with your registration. This fee is not transferrable.

Conference Proceedings

One copy of the proceedings is included with your registration fee. To order additional copies, send email to office@usenix.org or call 510.528.8649.

Birds-of-a-Feather Sessions (BoFs)

Tuesday and Wednesday, August 12–13

Do you have a topic that 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 telephoning the USENIX Conference Office at 714.588.8649, or email to: conference@usenix.org.

Have a Question?

For more information, contact us:

USENIX Conference Office
22672 Lambert Street, Suite 613
Lake Forest, CA 92630
Phone: 714.588.8649
Fax: 714.588.9706
Email: conference@usenix.org
URL: <http://www.usenix.org>

Hotel and Travel Information

Hotel Discount Reservation Deadline: → Friday, July 18, 1997 ←

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

Sheraton Seattle Hotel & Towers

1400 Sixth Avenue; Seattle, WA 98101

Toll Free: 800.325.3535

Local Telephone: 206.621.9000

Reservation Fax: 206.621.8441

Single Occupancy \$142.00

Double Occupancy \$162.00

(plus state and local taxes, currently at 15.2%)

Note: Requests for hotel reservations made after the deadline will be made on a space and rate available basis only.

Discount Airfares

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

JNR, Inc. Toll Free in US and Canada:

800.343.4546

Telephone: 714.476.2788

Airport to Hotel Transportation

The Sheraton Seattle is located about 30 minutes from the Seattle-Tacoma (Sea-Tac) International Airport.

Gray Line Service provides daily shuttle service every 20 minutes from 6 am until 11:30 pm to the Sheraton Seattle and other downtown hotels. Tickets cost \$7.50 one way, \$13.00 round trip, and can be purchased at the Gray Line Service Desk near the baggage claim area. Reservations are not required. Taxi service is \$30–\$35 one way and takes approximately 25 minutes.

Points of Interest

- **Pike Place Market:** Colorful farmer's market is the oldest continually-operating market in the nation; splendid array of seafood and produce stalls, restaurants, crafts, international foods.
- **Waterfront:** 1½ miles of restaurants, shops, boats, maritime sightseeing.
- **Seattle Aquarium:** Fascinating views from the bottom of Elliot Bay.
- **Pioneer Square:** Shopping, art galleries, international dining and sightseeing in Seattle's historic district.
- **Woodland Park Zoo:** Stroll through open-style exhibits of one of the top ten zoos in the country.
- **Pacific Science Center:** Hands-on mathematics and science exhibits; space films.
- **Seattle Center:** 74-acre urban park, home of Seattle's performing arts, Pacific Science Center, Space Needle, Children's Museum and festivals.
- **Space Needle:** 360-degree observation deck and lounge including two revolving restaurants.

Copy this form as needed. Type or print clearly.

Registration Form USENIX Windows NT Workshop, August 11-13, 1997

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) W W W

Attendee Profile

Please help us serve you better. By answering the following questions, you help us plan our activities to meet members' needs. All information is confidential.

- I do not want to be on the attendee list.
- I do not want my address made available for other than USENIX mailings.
- I do not want USENIX to email me notices of Association activities.

What is your affiliation (check one):

- academic commercial gov't R&D

What is your role in the purchase decision (check one):

- 1. final 2. specify 3. recommend 4. influence 5. no role

What is your primary job function (check one):

- 1. system/network administrator 2. consultant 3. academic/researcher
- 4. developer/programmer/architect 5. system engineer
- 6. technical manager 7. student 8. security 9. webmaster

How did you first hear about this meeting (check one):

- 1. USENIX brochure 2. newsgroup/bulletin board 3. :login:
- 4. Web 5. from a colleague 6. magazine

What publications or newsgroups do you read related to NT Development?

Payment must accompany this form

Payment (U.S. dollars only) must accompany this form. Purchase orders, vouchers, email, and telephone registrations cannot be accepted.

- Payment enclosed. Make check payable to USENIX Conference.

Charge to my: VISA MasterCard American Express Discover

Account No. / Exp. Date

Print Cardholder's Name

Cardholder's Signature

REFUND / CANCELLATION POLICY

If you must cancel, all refund requests must be in writing, with your signature, and postmarked no later than August 1, 1997. Telephone and email cancellations cannot be accepted. You may fax your cancellation or substitute another in your place. Contact the Conference Office for details: 714.588.8649.

Registration Fees (Monday-Wednesday, Aug 11-13)

Current member fee..... \$380.00 \$ _____

(Applies to individual members of USENIX, EurOpen national groups, JUS, and AUUG)

Non-member fee* \$450.00 \$ _____

*Join or renew your USENIX membership, AND attend the conference for the same low price. Check here:

Late fee applies if postmarked after Friday, July 25, 1997..... Add \$50.00 \$ _____

Full-time student** fee, pre-registered or on-site \$75.00 \$ _____

Full-time student** fee including USENIX membership fee..... \$100.00 \$ _____

**Students: Attach a photocopy of current student ID

TOTAL DUE \$ _____

I have emailed my Usage Abstract to *usenix-nt-abstracts@usenix.org* as per the instructions in the Registration Information.

I am an author of an accepted position paper.

Note that Usage Abstracts must be sent (unless you are the author of an accepted position paper) for your registration request to be processed.

You may fax your registration form to 714.588.9706 if paying by credit card. To avoid duplicate billing, please do not mail an additional copy.

Please complete this registration form and return it along with full payment to:

USENIX Conference Office

22672 Lambert St., Suite 613

Lake Forest, CA USA 92630

Phone: 714.588.8649

Fax: 714.588.9706



Who Should Attend: *Researchers in any field of computer science using or adopting Windows NT as their research base*

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The only workshop by and for researchers using Windows NT

August 11–13, 1997
Sheraton Seattle Hotel & Towers
Seattle, Washington

*Hotel Discount
Deadline: July 18*

*Register by July 25
and Save \$50*

4 Easy Ways for More Information:

1. Phone: 714.588.8649
2. Fax: 714.588.9706
3. Email: conference@usenix.org
4. Workshop URL: <http://www.usenix.org/usenix-nt/>

USENIX Conference Office
22672 Lambert Street, Suite 613
Lake Forest, CA 92630
Office Hours: 8:30 am–5:00 pm, Pacific Time

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Please pass this along to a colleague.