

# The 11th International Workshop on Network and Operating Systems Support for Digital Audio and Video NOSSDAV 2001

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June 25-26, 2001

[Danfords on the Sound](#), Port Jefferson, New York

<http://www.nossdav.org/2001>

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## NOSSDAV 2001 Organizing Committee

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## NOSSDAV 2001 CALL FOR PAPERS

The 11th International Workshop on Network and Operating Systems Support for Digital Audio and Video (NOSSDAV 2001) will bring together participants from academia and industry to present and discuss new ideas and future directions in networking and operating system support for multimedia. Exponential improvements in networking bandwidth, cost, and ubiquity coupled with the growing availability and use of streaming media content pose new networking and operating system research opportunities and challenges at the global systems level. We solicit papers in current or emerging areas including but not limited to ubiquitous multimedia services, broadband streaming media content distribution, webcasting, end-to-end resource management, real-time interactive streaming audio services, internet telephony, interactive network games, wireless multimedia systems, and multimedia information appliances and consumer devices. The workshop particularly encourages submission of papers describing implementations, measurements and field experience.

To ensure a productive workshop environment, attendance will be limited to about 70 participants who are active in the field. Each potential participant should submit a position paper or extended abstract that identifies new problems and explains why they are important, challenges conventional wisdom, advocates a specific solution, and/or reports on actual experience with real systems. Papers will be subject to a normal review process and are restricted to five pages. Participants will be invited based on the originality, technical merit and topical relevance of their submissions, as well as the likelihood that the ideas expressed in their submissions will lead to insightful technical discussions at the workshop. Papers submitted to NOSSDAV must not have been published or submitted elsewhere. Please do not submit abbreviated versions of journal or conference papers. Authors of accepted papers will be invited to present at the workshop and publish full-length versions of their papers in the workshop proceedings.

All submissions must be made through the web. Detailed guidelines for submissions are available [here](#). Due to the number of requests for extensions, the submission deadline has been extended one week.

### Important Dates

Submission Deadline for Papers:	February 15, 2001, extended to February 22, 2001
Acceptance Notification:	April 9, 2001
Camera Ready Deadline:	May 15, 2001
Workshop:	June 25-26, 2001

# NOSSDAV 2001 Author Instructions

Camera-ready papers due May 15, 2001

For authors of papers accepted for NOSSDAV 2001: the following information will acquaint you with the submission process and expedite preparation and publication of the proceedings for the workshop.

## Submission Deadlines and Preparation of Copy

All ACM sponsored proceedings will be included in the ACM Digital Library as well as prepared for printed publication. All papers for the conference must be submitted in an electronic format which conforms to ACM specifications and must be received no later than May 15, 2001. Your submission is limited to 10 pages.

[Templates](#) for ACM Proceedings are available in LaTeX (use option#2 -- sig-alternate class file), WordPerfect, and Microsoft Word (using Word is preferred). Note:

1. Papers should be produced using the templates and submitted electronically via email (as an attachment to the email) to: [typedept@fast.net](mailto:typedept@fast.net). Use the name of the conference in the subject line when submitting your material (example: NOSSDAV '01). Be sure your text and .ps files are formatted for American Letter (8-1/2x11).  
If you are using WORD, please send the .doc file (you do not have to send a .ps file). For authors using LaTeX, please send the .tex file and a .ps file (use option#2-sig-alternate class file). If you would like to use FrameMaker, please make the .fm file match the specifications outlined in the WORD template. FrameMaker users contact me for the copyright information for the bottom/left of the first page.
2. Do not alter the templates other than for line or page breaks. Authors using LaTeX, be sure to put all text into ONE .tex document, including the references from your .bbl file, please send your figures--zipped or tarred together.
3. Submissions that do not conform to the ACM standards and formats will be returned to the author for corrections and/or alterations.
4. Please be sure to leave the text box on the templates in place for the copyright blurb to be inserted or completed. For those authors using LaTeX, please fill in or insert the following three lines after
 

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\begin{document}: \conferenceinfo{NOSSDAV'01,} {June 25-27, 2001, Port Jefferson, New York, USA.}
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```
5. Your actual text (source) file is needed to produce the METADATA for ACM's digital library.
6. Please incorporate the reviewers remarks into your paper. Also be sure that there are no bad page or column breaks, meaning no widows (last line of a paragraph at the top of a column). If this happens, either tighten the previous column or force a line over. Section and Sub-section heads breaking near the end of a column or page, should remain with at least 2 lines of body text. Again, be sure that your .ps file is formatted for American Letter (8-1/2x11). Make Your Titles Initial Caps!!
7. If you or a co-author are an employee of the US Government, please contact Lisa Tolles-Efinger at Sheridan Printing, by phone at 908-213-8988 or via email at [typedept@fast.net](mailto:typedept@fast.net) with the conference name (NOSSDAV'01) in the subject line, about the correct copyright information for your paper.

## Copyright Release Form

ACM requires your original signature on a hardcopy of the copyright release form. The form itself can be [downloaded](#). The title, authors and publication must be filled in at the top and signed at the bottom. Be sure that your title matches your submission, or a new form will be requested. The form with the lead author's original signature must be mailed or sent via an express carrier by May 15, 2001 to:

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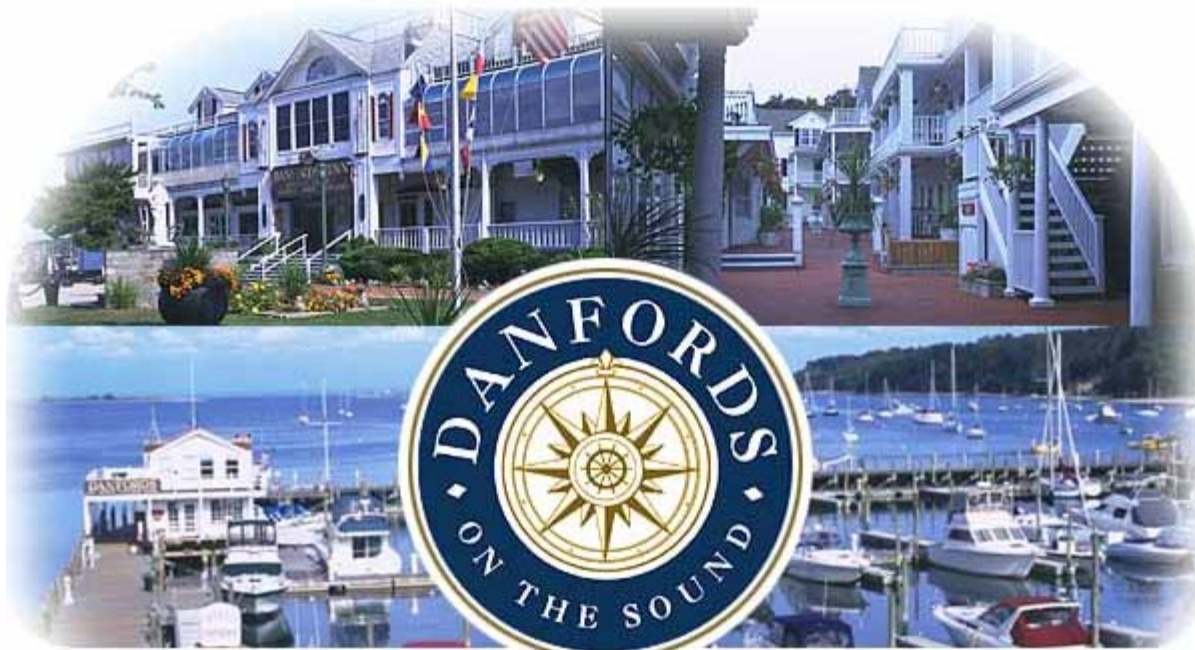
If you download this form now and send it in, you do not have to send it via an express carrier, regular USPS or airmail would be sufficient.

#### Questions

If you still have questions or problems please contact:

Lisa Tolles-Efinger  
Sheridan Printing Co., Inc.  
phone: 1-908-213-8988  
fax: 1-908-454-2554  
email: [typedept@fast.net](mailto:typedept@fast.net) with the conference name (NOSSDAV'01) in the subject line.

Thank you again for participating in this conference. We look forward to receiving your materials on a timely basis.



## NOSSDAV 2001 Housing

NOSSDAV 2001 will be held at [Danfords on the Sound](#). Nestled in the heart of historic Port Jefferson, a mere 50 miles from New York City, on the heritage North Shore of Long Island. Danfords on the Sound provides everything you could possibly ask for - every season of the year.

Breathtaking harbor views, 85 cozy and luxurious guest rooms, superb dining and entertainment, first class conference facilities, a spectacular marina, and impeccable personalized service are but a few of the distinctive touches that set Danfords apart.

Hotel Reservations: June is a very busy month at Danfords. Attendees are encouraged to reserve sleeping rooms very early. ACM is holding a small block of sleeping rooms for attendees of the conference. The conference rate is \$165/day single/double from Sunday June 24<sup>th</sup> through Wednesday, June 27<sup>th</sup>. If you'd care to stay additional days the rate is \$199. Please call +1-631-928-5200 and reference the ACM NOSSDAV conference to make your reservation. These rooms will only be available through May 18<sup>th</sup>.

Transportation: You may fly into any of the following airports: John F. Kennedy International, NY LaGuardia or Islip McArthur (closest to Danfords). ACM has arranged for discounted airfares and zone fares (no Saturday night stay required) on [Continental](#), [Delta](#), and [US Airways](#).

Ground Transportation: Please be sure to make your ground transportation reservations when you make your flight arrangements. **RESERVATIONS REQUIRED** for all ground transportation.

### John F. Kennedy International - Ground Transportation

Classic Transportation Services +1-631-567-5100.

Rate - \$43. There are discounts for multiple travelers.

Long Island Airport Limousine Service (LIALS) +1-718-656-7000.

Rate - \$43. There are discounts for multiple travelers and round trips.

Winston +1-631-924-1200.

Rates - \$44. There are discounts for multiple travelers.

### LaGuardia - Ground Transportation

Classic Transportation Services +1-631-567-5100.

Rate - \$43. There are discounts for multiple travelers.

Long Island Airport Limousine Service (LIALS) +1-718-656-7000.

Rate - \$43. There are discounts for multiple travelers and round trips.

Winston +1-631-924-1200.

Rates - \$44. There are discounts for multiple travelers.

Islip McArthur (closest to Danfords) - Ground Transportation

Classic Transportation Services +1-631-567-5100.

Rate - \$26. There are discounts for multiple travelers.

Long Island Airport Limousine Service (LIALS) +1-718-656-7000.

Rate - \$32. There are discounts for multiple travelers and round trips.

Winston +1-631-924-1200.

Rates - \$33. Please ask about available discounts.

Please be sure to make your ground transportation reservations when you make your flight arrangements.  
**RESERVATIONS REQUIRED** for all ground transportation.

## NOSSDAV 2001 Invited Speaker

### [Ideas for Next Generation Content Delivery, Peter Danzig](#)

#### Abstract

I will overview the technology behind content delivery networks and describe ideas for reducing response times and increase end-to-end bandwidth for the delivery of dynamic Internet traffic.

#### Biography

Peter B. Danzig is entrepreneur in residence at ABS Ventures and Accel Venture Partners. Peter is former Vice President of Technology and founder of Akamai Technology's west coast team, where he directed engineering and business development. Danzig is an adjunct Associate Professor at the University Southern California. He has published extensively. Danzig's research on Internet object caches became the reference implementation for Internet web caches, and formed the basis of Squid, the Cisco cache engine, and Network Appliance's NetCache.

Danzig served as chief architect and CTO of Network Appliance's NetCache division. Danzig founded Internet Middleware Corporation to build the first industry grade web caches, and sold the company to Network Appliance in 1997.

Danzig received his B.S. in Applied Physics from University of California Davis and his Ph.D. in Computer Science from the University of California Berkeley. He has won the NSF National Young Investigator award, two USC Innovative Teaching Awards, and the U.C. Berkeley Angelokous award.

Danzig and his wife Lava Thomas live in Menlo Park, California. He is teaching at Stanford Computer Science Department in the Spring 2001 quarter.



# NOSSDAV 2001 Technical Program

## Program At-a-Glance

Date	Time	
<b>Sunday, June 24, 2001</b>	7:00 PM - 9:00 PM	<i>Reception and Registration</i>
<b>Monday, June 25, 2001</b>	8:00 AM - 9:00 AM	<i>Registration</i>
	9:00 AM - 10:30 AM	<a href="#"><i>Ideas for Next Generation Content Delivery</i></a> (Peter Danzig)
	11:00 AM - 12:30 PM	<a href="#"><i>Streaming Media</i></a>
	1:30 PM - 3:00 PM	<a href="#"><i>Quality of Service</i></a>
	3:30 PM - 5:30 PM	<a href="#"><i>Multicast</i></a>
	7:00 PM - 8:30 PM	<a href="#"><i>Panel discussion: multimedia after a decade of research</i></a> (What have we learned? What's left to do?)
<b>Tuesday, June 26, 2001</b>	9:00 AM - 10:30 AM	<a href="#"><i>Mobile Multimedia</i></a>
	11:00 AM - 12:00 PM	<a href="#"><i>Potpourri</i></a>
	1:30 PM - 3:00 PM	<a href="#"><i>Collaboration and Internet Telephony</i></a>
	3:30 PM - 4:30 PM	<a href="#"><i>TCP for Multimedia</i></a>

## Paper Sessions

### Monday, June 25, 2001

9:00

AM - [\*Ideas for Next Generation Content Delivery\*](#) (Peter Danzig)

10:30 AM

11:00

AM - [\*Streaming Media\*](#)

12:30 PM

*Mocha: A Quality Adaptive Multimedia Proxy Cache for Internet Streaming*  
Reza Rejaie (AT&T Labs - Research), Jussi Kangasharju (Institut Eurecom)

*Bayeux: An Architecture for Wide-Area, Fault-Tolerant Data Dissemination*

Shelley Zhuang (University of California-Berkeley), Ben Zhao (University of California-Berkeley),

Anthony D. Joseph (University of California at Berkeley), Randy H. Katz (University of California at Berkeley), John Kubiawicz (University of California-Berkeley)

*Analysis of Educational Media Server Workloads*

Jussara Almeida (University of Wisconsin-Madison), Jeffrey Krueger (University of Wisconsin-Madison), Derek Eager (University of Saskatchewan), Mary Vernon (University of Wisconsin - Madison)

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

*Quality of Service*

*Resource Allocation and Management in DiffServ Networks for IP telephony*

Maarten Buchli (Alcatel Bell), Danny De Vleeschauwer (Alcatel Bell), Jan Janssen (Alcatel Bell), Annelies Van Moffaert (Alcatel Bell), Guido Petit (Alcatel Bell)

*Blue: An Alternative Approach To Active Queue Management*

Wu-chang Feng (Univ. of Michigan), Dilip Kandlur (IBM Research), Debanjan Saha (Tellium, Inc), Kang G. Shin (University of Michigan)

*SACRIO: An active buffer management scheme for differentiated service networks*

Saikrishnan Gopalakrishnan (Cisco Systems), Narasimha Reddy (Texas A & M University)

**3:30  
PM -  
5:30  
PM**

*Multicast*

*A comparison of layering and stream replication video multicast schemes*

Taehyun Kim (Georgia Institute of Technology), Mostafa Ammar (Georgia Institute of Technology)

*Scalable Techniques for Discovering Multicast Tree Topology*

Kamil Sarac (University of California, Santa Barbara), Kevin Almeroth (University of California, Santa Barbara)

*Dimensioning Server Access Bandwidth and Multicast Routing in Overlay Network*

Sherlia Shi (Washington University), Jonathan Turner (Washington University in St. Louis), Marcel Waldvogel (Washington University in St. Louis)

*The Utility of Feedback in Layered Multicast Congestion Control*

Sergey Gorinsky (University of Texas), Harrick Vin (Univ. of Texas)

**7:00  
PM -  
8:30  
PM**

*Panel discussion: multimedia after a decade of research* (What have we learned? What's left to do?)

**Tuesday, June 26, 2001**

**9:00  
AM -  
10:30  
AM**

*Mobile Multimedia*

*Network Support for Mobile Multimedia using a Self-adaptive Distributed Proxy*

Zhuoqing Morley Mao (University of California at Berkeley), Hoi-Sheung Wilson So (University of California at Berkeley), Byunghoon Kang (University of California at Berkeley), Randy Katz (University of California at Berkeley)

*Performance Evaluation of UDP Lite for Cellular Video*

Amoolya Singh (University of California at Berkeley), Almudena Konrad (University of California at Berkeley), Anthony D. Joseph (University of California at Berkeley)

*Dynamic Handoff of Multimedia Streams*

Roger Karrer (ETH Zurich), Gross Thomas (ETH Zurich)

**11:00  
AM -  
12:00  
PM**

*Potpourri*

*Scaling video conferencing through spatial tiling*

Ladan Gharai (USC/ISI), Colin Perkins (USC/ISI), Allison Mankin (USC/ISI)

*Lightweight Kernel/User Communication for Real-Time and Multimedia Applications*

Christian Poellabauer (Georgia Institute of Technology), Karsten Schwan (Georgia Institute of Technology), Richard West (Boston University)

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

*Collaboration and Internet Telephony*

*A Case for Network Musical Performance*

John Lazzaro (University of California, Berkeley), John Wawrzynek (University of California, Berkeley)

*Very Low Bit-rate Audio Coding Technique Using MIDI Representation*

Toshio Modegi (Dai Nippon Printing Co., Ltd.)

*Towards Junking the PBX: Deploying IP Telephony*

Wenyu Jiang (Columbia University), Jonathan Lennox (Columbia University), Henning Schulzrinne (Columbia University), Kundan Singh (Columbia University)

**3:30  
PM -  
4:30  
PM**

*TCP for Multimedia*

*TCP-Real Improving Real-time Capabilities of TCP over Heterogeneous Networks*

Chi Zhang (Northeastern University), Vassilis Tsaoussidis (Northeastern University)

*Video over TCP with Explicit Delay Notification*

Pai-Hsiang Hsiao (Harvard University), H. T. Kung (Harvard University), Koan-Sin Tan (National Chiao-Tung University)

# NOSSDAV paper submission

NOSSDAV only reviews and publishes original work not currently under consideration elsewhere, as described below. Papers not meeting these criteria will be withdrawn from the conference without review as soon as the conflict comes to the attention of the program committee.

Papers must be submitted electronically in the manner and format detailed below. Authors for whom this presents a severe problem should contact one of the technical program committee co-chairs to discuss alternatives.

Papers must be formatted according to the IEEE standard double-column format, except the font size, which must be 11pt.

Submission must be in PDF, version 3. However, the committee will also accept Postscript from Latex, FrameMaker, or MSWord source file. Postscript papers must use only standard PostScript fonts: Times Roman, Courier, Symbol, and Helvetica. (Postscript output from MSWord typically does not work on non-Microsoft platforms. The use of the Apple LaserWriter II or Linotronic printer driver is strongly recommended). The above formatted papers can be submitted in a compressed form (gzip, but not zip).

LaTeX, Framemaker and Microsoft Word files cannot be accepted. You must submit PDF or PostScript.

Papers with more than 5 pages will not be reviewed.

To submit a paper, please go to the [electronic submissions page](#).

## Dual Submission Policy

It is in the interest of NOSSDAV and its attendees that material presented at NOSSDAV has not been published elsewhere. Also, reviewing the same material twice wastes scarce reviewer resources. Waiting for NOSSDAV reviews can significantly improve a potential journal submission and avoids that two different sets of reviewers make similar recommendations.

Given these motivations, the following policies hold:

- Once submitted to NOSSDAV, a paper cannot be submitted to another workshop, conference or journal until the NOSSDAV acceptance decision is known.
- A paper that is under consideration elsewhere, including a workshop or journal, cannot be submitted to NOSSDAV.
- If material has appeared or is likely to appear in a workshop, the paper should indicate so. This is only acceptable if the NOSSDAV paper provides substantial additional results compared to the earlier or pending publication or if the workshop produced no printed proceedings.

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Last updated by [Henning Schulzrinne](#)