NOSSDAV 2004

The 14th ACM International Workshop on Network and Operating Systems Support for Digital Audio and Video

June 16th - 18th, 2004
Kinsale, County Cork, Ireland

WELCOME TO **NOSSDAV 2004**

The NOSSDAV committee invites you to attend this year's workshop, which will be held in the beautiful surroundings of Kinsale, located on the southern coast of Ireland (June 16th-18th).

The 14th ACM International Workshop on Network and Operating Systems Support for Digital Audio and Video (NOSSDAV) brings together researchers, developers and practitioners from academia and industry to present and discuss new ideas and future directions in networking and operating systems support for all forms of networked human interaction. The workshop is sponsored primarily by ACM SIG Multimedia, Microsoft Research, the US National Science Foundation and Science Foundation Ireland, with secondary sponsorship by IBM Research, and is being held in cooperation with ACM SIGCOMM and ACM SIGMOBILE.

A key aspect of the workshop is that it provides extensive discussion periods during which attendees can informally discuss their current and future research. Traditionally, NOSSDAV has emphasized high quality experimental research based on prototype or real systems.

LIVE INTERNET BROADCAST
The technical sessions of NOSSDAV 2004 will be broadcast live over the Internet using End System Multicast (ESM) developed at Carnegie Mellon University. Please click here and follow the watch link to tune in.

Keynote
Speaker: Dr. Bill Weihl, CTO Akamai
Talk Title: Beyond Content Delivery: Applications to the Edge

Panel
Moderator: Prof. Hui Zhang, Carnegie Mellon University
Panel Title: Wireless Multimedia: Hype and Reality

Speakers:
Victor Bahl, Microsoft Research
Gisli Hjalmtysson, Reykjavik University
Sugih Jamin, University of Michigan
Geoffrey Xie, Naval Postgraduate School

Workshop Program
Workshop program updated

Important Dates:

Paper registration deadline (only title & abstract due by this date)	Feb 23, 2004, (5pm EST) (firm)
Paper submission deadline (full paper due by this date)	Mar 1, 2004, (5pm EST) (firm)
Acceptance notification	Apr 19, 2004
Student Travel Grants Deadline	Apr 26, 2004
Camera ready deadline	May 5, 2004
Workshop early registration & hotel deadline	May 17, 2004

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June 16-18, 2004 --- Kinsale, County Cork, Ireland

CALL FOR PAPERS

NOSSDAV 2004 will take place in Kinsale on the exceptionally scenic southern coast of Ireland. Kinsale is approximately a 20 minute drive outside Cork city, which is within easy reach of major European capitals and the east coast of the US. The workshop is sponsored primarily by ACM SIG Multimedia, Microsoft Research the US National Science Foundation and Science Foundation Ireland, with secondary sponsorship by IBM Research, and is being held in cooperation with ACM SIGCOMM and ACM SIGMOBILE.

NOSSDAV invites submissions on all areas of multimedia, but strongly encourages submissions in newly emerging specialized areas such as networked games and peer-to-peer streaming. NOSSDAV 2004 will be run very much as a workshop with an emphasis on cutting-edge research and lively discussion. Papers grounded in high-quality experimental research based on prototype or real systems, including innovative experimental commercial designs and prototypes, as well as papers proposing new research directions for the community or calling into question existing conventional wisdom are particularly welcome. Given the growth and diversification of the field, a broad view will be taken in deciding what papers are within the scope of the workshop. For instance, papers describing novel ideas in congestion control or application-level multicast that are arguably of interest in the context of multimedia, would be in scope. If you are unsure and wish to check if a paper is within the workshop scope please email the Co-Chairs. Student participation is strongly encouraged - supported by several student travel grants and registration fee rebates.

Submissions as well as camera-ready versions of accepted papers should be no longer than 6 pages. The expectation is that papers accepted at the workshop will eventually lead to full-length papers at high-quality conferences or journals. The topics of interest include, but are not limited to:

- Networked games
- Peer-to-peer multimedia
- Broadband streaming media content distribution
- 3D multimedia and (networked) immersive environments
- Wireless and ad-hoc network multimedia systems
- Embedded multimedia devices (e.g., PVRs)
- Multimedia security
- Internet telephony
- Sensory interactive applications
- Digital rights management

Workshop Co-Chairs:
Venkat Padmanabhan, Microsoft Research (USA)
Cormac Sreenan, University College Cork (Ireland)
Email: nossdav2004-pcchairs@cs.ucc.ie

Deadlines:

Paper registration deadline
(only title & abstract due by this date)   February 23, 2004, (5pm EST) (firm)

Paper submission deadline
(full paper due by this date)   March 1, 2004, (5pm EST) (firm)

www.nossdav.org/2004

NOSSDAV 2004 ***The 14th ACM International Workshop on Network and Operating Systems Support for Digital Audio and Video***

NOSSDAV 2004 ORGANIZING COMMITTEE

Program Co-Chairs:

Venkat Padmanabhan	Microsoft Research (USA)
Cormac Sreenan	University College Cork (Ireland)

Program Committee:

Kevin Almeroth	UC Santa Barbara (USA)
Ernst Biersack	Institut Eurecom (France)
Phil Chou	Microsoft Research (USA)
Christophe Diot	Intel Research (UK)
Kevin Jeffay	UNC Chapel Hill (USA)
Srinivasan Keshav	University of Waterloo (Canada)
Sue Moon	KAIST (Korea)
Reza Rejaie	University of Oregon (USA)
Henning Schulzrinne	Columbia University (USA)
Srinivasan Seshan	CMU (USA)
Anees Shaikh	IBM Research (USA)
Lars Wolf	TU Braunschweig (Germany)

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ABOUT KINSALE

Kinsale is a small picturesque harbour town located on the southern coast of Ireland. This quaint town has many popular attractions, ranging from experiencing the local heritage, to sailing and deep sea angling to golf. Kinsale is also located close to The Blarney Castle which has been a popular Irish tourist location for many years. Check out the Kinsale website.

MAP OF KINSALE

Pictorial maps of Kinsale are available here and here, which can be used to locate the conference (shown as H on the map), a number of accomodation locations (A,K and H on the map) and numerous places to eat.

ACCOMODATION

This year the workshop will be held in the (The Trident Hotel) (H on the map) Kinsale, where a block of rooms have been set aside at a reduced rate. Accomodation is also available at The Actons Hotel (A on the map), The Blue Haven Hotel (K on the map) and Perryville House (right-hand end of Perarse Street on the map).

Special reduced rates have been arranged at the Trident Hotel (location of conference) which will be available until May 17 2004. "Executive Rooms" are available for E150 (single occupancy) or E90 (double occupancy). Note that the Trident Hotel also has lower-quality "Standard Rooms" but since these are soon to undergo renovation we did not negotiate a special rate for these or include them in our agreement with the hotel. **All reservations must be direclty with the the hotel. Please use the group name ACM/NOSSDAV when making reservations.**

Trident Hotel	Telephone:	353-21-4772301
World's End	Fax:	353-21-4774173
Kinsale		
County Cork	E-mail:	info@tridenthotel.com
Ireland		

Reduced rates have also been arranged for a limited number of rooms for the 16th & 17th June at the following Hotels (which are all within 5-10 minutes walking distance of the Conference hotel):

Hotel/B&B	Twin Room	Single Room	Confirm By	Contact

Actons Hotel (A on map)	84€ pps	118€	30th April	www.actonshotelkinsale.com
Blue Haven Hotel (K on map)	70€ pps	100€	30th April	www.bluehavenkinsale.com
Friar's Lodge	40€ pps	55€	15th May	Email:mtierney@indigo.ie
The White House (J on map)	55€ pps	65€	31st May	www.whitehouse-kinsale.ie

As well as Hotels, there are many B&Bs located in Kinsale such as The Pier House, The Tesben House, The Holidayhound and Ocean View Guest Suite to name but a few.

As Kinsale is a very busy tourist destination, we would advise that you arrange your accommodation as soon as possible.

Travelling to Kinsale

Kinsale is on the south coast of Ireland, about 20 miles by road to the south of Cork city, the capital of County Cork and the second city in the Republic of Ireland. It is possible to reach Cork by air or sea.

Flying from the USA

Direct flights from the US to both Dublin and Shannon Airports are provded by Aerlingus.
Bus Eireann provides a direct bus service from both Shannon and Dublin Airports to Cork City the following is a summary of the services they provide (schedule). From Cork City a Bus or Taxi can be used to reach Kinsale.
Iarnrod Eireann provide a train service from Dublin and Limerick to Cork City. Both Airports provide direct Bus services to the train stations. Approximate journey times for trains are 3 hours and 2 hours for Dublin and Limerick respectively.
More information on these services can be found at: Bus and Train information, Dublin Airport and Shannon Airport.

Travelling by Air

Cork International Airport has direct flights from Alicante, Amsterdam, Barcelona, Belfast, Birmingham, Bristol, Brussels, Cardiff, Dublin, East Midlands, Edinburgh, Frankfurt, Glasgow, Jersey, Leeds, London (City, Heathrow, Stanstead amd Gatwick), Malaga, Malta, Manchester, Milan, Nantes, Nice, Paris, Prague, Plymouth, Southampton, Swansea and Rome.

Buses from the airport to Kinsale
Scheduled buses, run by Bus Eireann, travel between Kinsale and the airport, which is about 15 minutes drive from the town. On Monday through Saturday, the Kinsale bus leaves the airport at the following times: 09:00, 10:00, 12:00, 13:30, 15:00, 15:45, 17:00, 18:15, 19:15. On Sunday, the Kinsale bus leaves the airport at 09:45, 12:45, 14:45, 18:15. The one-way fare in 3 euro.

Taxis from the airport to Kinsale
It is also possible to take a taxi from the airport to Kinsale -- from the rank at the door of the passenger terminal. The fare is usually in the range of 32 to 35 euro.

Travelling by Ship

Ferry routes to Cork Ferryport
Cork Ferryport provides connections to Swansea in Britain and to Roscoff in France. For those bringing their own car by ferry, Cork Ferryport is about 30 minutes drive from Kinsale. For those coming as foot passengers on a ferry to Cork Ferryport, the cheapest way to reach Kinsale is to take a public bus, to Cork Bus Station in the city centre and then transfer onto a bus to Kinsale.

Other car-ferry routes to Ireland
If you are thinking of bringing your car, you will probably be interested in touring, so you may not be concerned to arrive at the ferry port closest to the conference site. Some other ferry routes to Ireland include those operated by Irish Ferries between Rosslare in Ireland and Roscoff and Cherbourg in France and between Rosslare and Dublin in Ireland and Holyhead and Pembroke in Wales. Stena Line offer several other ferry routes between Ireland (north and south) and Scotland and Wales.

International Travel by Bus or Train

For those who prefer to travel by surface transport but do not wish to bring their own car, it is possible to come by train or long-distance coach. For long-distance coach travel to Cork from a wide range of UK and European destinations -- see Bus Eireann/Eurolines. See Irish Rail for information about train travel within Ireland, including information about rambler tickets which allow unlimited travel over the whole island, north and south.

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Paper submission instructions

Submitting a paper to NOSSDAV 2004 involves 2 steps. You must complete **both** steps by their respective deadlines for your paper to be included in the review process. We are using the EDAS system to manage submissions to NOSSDAV 2004. If you don't already have an EDAS account, you will need to create one. You can do so by clicking on the paper registration link below.

Step #1: Register your paper

To register a paper, you'll need to supply the title, the author name(s), and the abstract. The actual paper itself should be uploaded separately per the instructions in step #2 below.

1. The deadline for registering papers is **5 PM EST (10 PM UTC), February 23, 2004**. This is a hard deadline and we will be unable to grant any extensions.
2. To register a paper, click here. You may be asked to log in to EDAS. If you don't have an EDAS account, you should create one at this stage.
3. Once you have successfully registered your paper, you should receive an email confirmation from "NOSSDAV 2004". Please save this email since it contains important instructions for the next step, viz. uploading your paper.

Step #2: Upload your paper

The second and final step is to upload the file containing your paper. Note that you can upload a paper only if you had previously registered it per step #1 above.

1. The deadline for uploading your paper is **5 PM EST (10 PM UTC), March 1, 2004**. This is a hard deadline and we will be unable to grant any extensions.
2. Papers must be in either PostScript or PDF format. We cannot accept any other formats. It is your responsibility to make sure that your paper prints fine. Avoid using any non-standard fonts that may create problems in printing. If we are unable to print your paper as is, we will be unable to include it in the review process.
3. The paper must be at most 6 pages in length on letter-sized paper (8.5"x11") and be set in a 10-point or larger font. Either single-column or double-column format is acceptable. If you are using LaTeX for your document preparation, the "dvipdfm -p letter" command could be used to generate PDF suitable for letter-sized paper.
4. The paper should **not** be anonymized. Please include the author names and affiliations on the first page. Also, please include all relevant references --- do not anonymize any of the references.
5. To upload your paper, follow the instructions in the email that you should have received when you registered your paper. The email should contain instructions

on how to upload your paper either via a web form or via FTP.

6. The actual uploading of your paper might take some time depending on the size of the file and the speed of your connection. Once the process has completed, you should received a confirmation email from "NOSSDAV 2004". Please save this email for future reference.

7. The above email also includes instructions on updating your paper (i.e., uploading a newer version of the file). You may upload as many updates as you want until the deadline. We strongly urge you to not to wait until the last minute to upload your paper to avoid problems due to server congestion.

If you need further clarification, please send email to nossdav2004-pcchairs@cs.ucc.ie

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Conference Program

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Day	AM/PM	Agenda
Wed. June 16th	7:00-9:00 PM	**Reception** Reception in Kinsale Brewing Company
	9:00-9:15 AM	**Welcome Remarks** Venkat Padmanabhan & Cormac Sreenan NOSSDAV 2004 Co-Chairs
	9:15-10:30 AM	**Keynote Address** **Beyond Content Delivery: Applications to the Edge** Bill Weihl, CTO Akamai
	10:30-11:00 AM	**Break**
		Streaming Session Chair: Liam Murphy, University College Dublin *Scalable Resilient Media Streaming* Suman Banerjee (University of Wisconsin-Madison), Seungjoon Lee (University of Maryland at College Park), Ryan Braud (University of Maryland), Samrat Bhattacharjee (University of Maryland at College Park), Aravind Srinivasan (University of Maryland)

	11:00 AM-12:30 PM	***Considering Altruism in Peer-to-Peer Internet Streaming Broadcast*** Yang-hua Chu (Carnegie Mellon University), Hui Zhang (Carnegie Mellon University) ***An Adaptive Multiple Retransmission Technique for Continuous Media Streams*** Rishi Sinha (University of Southern California), Christos Papadopoulos (University of Southern California) ***Comparison of Delivery Architectures for Immersive Audio in Crowded Networked Games*** Paul Boustead (Telecommunications and Information Technology Research Institute, University of Wollongong), Farzad Safaei (Telecommunications and Information Technology Research Institute,University of Wollongong)
1st Day Thur. June 17th	12:30-2:00 PM	**Lunch**
	2:00-3:50 PM	**Overlay Networking** Session Chair: Dan Rubenstein, Columbia University ***Managing a portfolio of overlay paths*** Daria Antonova (Northeastern University), Arvind Krishnamurthy (Yale University), Zheng Ma (Yale University), Ravi Sundaram (Northeastern University) ***Passive Inference of Path Correlation*** Lili Wang (University of Kentucky), James Griffioen (University of Kentucky), Ken Calvert (University of Kentucky), Sherlia Yunxi Shi (University of Kentucky) ***A Framework for Architecting Peer-to-Peer Receiver-driven Overlays*** Reza Rejaie (University of Oregon), Shad Stafford (University of Oregon) ***Efficient and Flexible Parallel Retrieval using Priority Encoded Transmission*** Ramaprabhu Janakiraman (Washington University in St. Louis),

Lihao Xu (Washington University in St. Louis)

Connectivity Restrictions in Overlay Multicast
Aditya Ganjam (Carnegie Mellon University),
Hui Zhang (Carnegie Mellon University

	3:50-4:20 PM	**Break**
	4:20-5:30 PM	**Wireless and Mobility** Session Chair: Dirk Pesch, Cork Institute of Technology ***Client-Centered Energy Savings for Concurrent HTTP Connections*** Haijin Yan (University of Georgia), Rupa Krishnan (University of Georgia), Scott Watterson (University of Georgia), David Lowenthal (University of Georgia) ***Energy-aware Video Streaming with QoS Control for Portable Computing Devices*** Morihiko Tamai (Nara Institute of Science and Technology), Tao Sun (Nara Institute of Science and Technology), Keiichi Yasumoto (Nara Institute of Science and Technology), Naoki Shibata (Shiga University), Minoru Ito (Nara Institute of Science and Technology) ***A Time Series-based Approach for Power Management in Mobile Processors and Disks*** Xiaotao Liu (University of Massachusetts, Amherst), Prashant Shenoy (University of Massachusetts at Amherst), Weibo Gong (University of Massachusetts at Amherst)
	7:00-11:00 PM	**Workshop Banquet**
		Congestion Control and Scheduling Session Chair: Venkat Padmanabhan, Microsoft Research

	9:00-10:30 AM	***Media-Friendliness of a Slowly-Responsive Congestion Control Protocol*** Zhiheng Wang (Univ. of Michigan, Ann Arbor), Sujata Banerjee (HP Laboratories), Sugih Jamin (University of Michigan) ***Oscillations and Buffer Overflows in Video Streaming under NonNegligible Queuing Delay*** Yueping Zhang (Texas A&M University), Dmitri Loguinov (Texas A&M University) ***Measurements of the Congestion Responsiveness of Windows Streaming Media*** James Nichols (WPI), Mark Claypool (Worcester Polytechnic Institute), Robert Kinicki (Worcester Polytechnic Institute), Mingzhe Li (WPI) ***Reduced State Fair Queuing for Edge and Core Routers*** *Ramana Rao Kompella (University of California, San Diego),* *George Varghese (University of California at San Diego*
	10:30-11:00 AM	**Break**
	11:00 AM-12:30 PM	**Panel** **Panel Title:** Wireless Multimedia: Hype and Reality **Moderator:** Hui Zhang, Carnegie Mellon University **Panelists:** Victor Bahl, Microsoft Research Gisli Hjalmtysson, Reykjavik University Sugih Jamin, University of Michigan Geoffrey Xie, Naval Postgraduate School
	12:30-2:00 PM	**Lunch**
		Systems Session Chair: Kevin Jeffay, University of North Carolina ***Desktop Scheduling: How Can We Know What the User Wants?*** Yoav Etsion (The Hebrew University),

2nd Day Fri. June 18th	2:00-3:30 PM	Dan Tsafrir (The Hebrew University), Dror G. Feitelson (The Hebrew University) ***AMPS: A Flexible, Scalable Proxy Testbed for Implementing Streaming Services*** Xiaolan Zhang (University of Massachusetts, Amherst), Michael Bradshaw (University of Massachusetts), Yang Guo (The MathWorks), Bing Wang (University of Massachusetts, Amherst), James F. Kurose (University of Massachusetts at Amherst), Prashant Shenoy (University of Massachusetts at Amherst) ***A Fully Automated Fault-tolerant System for Distributed Video Processing and Off-site Replication*** George Kola (University of Wisconsin Madison), Tevfik Kosar (University of Wisconsin Madison), Miron Livny (University of Wisconsin-Madison) ***Distributed Server Replication in Large Scale Networks*** Bong-jun Ko (Columbia University), Dan Rubenstein (Columbia University
	3:30-4:00 PM	**Break**
	4:00-5:30 PM	**Games** Session Chair: Prashant Shenoy, University of Massachusetts at Amherst ***Low Latency and Cheat-Proof Event Ordering for Peer-to-Peer Games*** Chris GauthierDickey (University of Oregon), Daniel Zappala (University of Oregon), Virginia Lo (University of Oregon), James Marr (University of Oregon) ***Analysis of State Exposure Control to Prevent Cheating in Online Games*** Kang Li (University of Georgia), Shanshan Ding (University of Georgia), Doug McCreary (University of Georgia)

		The Effects of Latency on Online Madden NFL Football James Nichols (WPI), Mark Claypool (Worcester Polytechnic Institute) ***Adaptive Server Selection for Large-scale Interactive Online Games*** Lee, Kang-won (IBM), Bong-jun Ko (Columbia University), Seraphin Calo (IBM T J Watson Research Center)
	5:30-5:40 PM	**Concluding Remarks**

The 14th ACM International Workshop on Network and Operating Systems Support for Digital Audio and Video

WORKSHOP REGISTRATION

To register for NOSSDAV 2004, please download and fill out the registration form (Word, PDF). To avail of early registration discounts this form should be returned via regular mail or fax before May 17, 2004.

STUDENT TRAVEL GRANTS

Thanks to the support from our sponsors, we expect to be in a position to offer several travel grants for students to attend NOSSDAV 2004. Grants will be in the range US$700-1000 and contribute towards the costs of registration, travel, and lodging. More information on these grants is available here The deadline for applying for student grants is Apr 26, 2004 . There is no need to wait until the paper acceptance notification date of April 19.

NOSSDAV 2004 KEYNOTE SPEAKER

Beyond Content Delivery: Applications to the Edge
[Bill Weihl](#)
CTO, Akamai

Abstract

CDNs have evolved beyond caching and delivery of web objects and streams. With services such as Akamai's EdgeComputing Powered by Websphere, distributed computing on a world-wide grid is now a reality for a wide range of business applications, providing subsecond response time to all users wherever they are, unprecedented levels of fault-tolerance, and massive scalability on-demand. Application resources can be provisioned in seconds, responding in real-time to changes in load on a given application. In some cases, an application can be deployed completely on the global platform without any central infrastructure. In other cases, core database and business logic remain in the enterprise data center, while the presentation layer and some database and business logic functionality can move onto the global platform. We will describe the evolution of CDNs and the challenges faced in distributing customer applications.

Biography

Bill Weihl is currently Chief Technology Officer (CTO) of Akamai. He joined Akamai in 1999 and soon after was appointed Chief Architect for Akamai's Content Delivery Services. He was promoted to CTO in October, 2002. Prior to joining Akamai, Dr. Weihl was a Senior Consulting Engineer at Compaq's (formerly Digital's) Systems Research Center. He led the design and development of Digital's Continuous Profiling Infrastructure (DCPI). Prior to his work at DEC SRC, Dr. Weihl was a tenured associate professor of computer science at the Massachusetts Institute of Technology (MIT). He is recognized worldwide for his leadership in research on distributed and parallel computing, with notable results in transaction processing, parallel programming languages, distributed garbage collection, replication, and scheduling. He received his B.S., M.S, and Ph.D. degrees in Computer Science from MIT.

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You may register by filling the registration form below and submitting it via regular mail or fax.

Prof. Cormac Sreenan
Attn: NOSSDAV Registration
Department of Computer Science
University College Cork
Ireland
Email: HYPERLINK "mailto:a.obrien@cs.ucc.ie" a.obrien@cs.ucc.ieVoice: +353-21-490-2711
FAX: +353-21-490-3978
First Name: FORMTEXT

Last Name: FORMTEXT
Affiliation: FORMTEXT
Email: FORMTEXT   Street Address: FORMTEXT
City: FORMTEXT   State/Province: FORMTEXT
Zip/Postal Code: FORMTEXT   Country: FORMTEXT
Telephone: FORMTEXT   FAX: FORMTEXT   ACM Member? Yes FORMCHECKBOX ACM #:
FORMTEXT   No FORMCHECKBOX Full-time Student? FORMCHECKBOX Yes FORMCHECKBOX No
[Students must supply evidence of student

status (e.g. student ID) at the workshop]DIETARY RESTRICTIONS: Vegetarian

Other (specify): _____

PAYMENT INFORMATION: [Please tick the relevant box below as appropriate]

Registrations FeesOn or Before May 17, 2004After May 17, 2004ACM MemberUS$295 FORMCHECKBOX US$340 FORMCHECKBOX Non-ACM MemberUS$350 FORMCHECKBOX US$395 FORMCHECKBOX StudentUS$150 FORMCHECKBOX US$195 FORMCHECKBOX Payment Method (check one): FORMCHECKBOX Cheque FORMCHECKBOX Money Order   FORMCHECKBOX Credit CardCheque or money order must be made payable in US$ to: ACM NOSSDAV 2004.

For credit card transactions please fill out the information below:Credit Card (check one): FORMCHECKBOX Visa FORMCHECKBOX MasterCard   FORMCHECKBOX American ExpressCredit card number: FORMTEXT

Expiration Date: FORMTEXT   Name on the credit card: FORMTEXT

Total Charges Authorized (see chart above): FORMTEXT

Signature: FORMTEXT   Please note that any credit card information you fax or send via physical mail will be entered on-line into a secure payment server for processing. Signing above also indicates your approval of this transmission.

VISA INFORMATION: If you require a VISA to enter the Republic of Ireland, we can issue a letter of invitation to attend the Workshop. If you request this letter please tick here FORMCHECKBOX . The letter will be mailed to the address given on your form.

NAME BADGES:

Please state precisely how you wish your name to appear on your conference name badge below.
        Name Badge   FORMTEXT

For further information please contact the program chairs:

Professor Cormac Sreenan   and   Dr Venkat Padmanabhan

Office Use Only

Date Received

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PAYMENT INFORMATION: [Please **tick the relevant box** below as appropriate]

Registrations Fees	On or Before May 17, 2004	After May 17, 2004
ACM Member	US$295 ☐	US$340 ☐
Non-ACM Member	US$350 ☐	US$395 ☐
Student	US$150 ☐	US$195 ☐

Payment Method (check one): ☐ Cheque ☐ Money Order ☐ Credit Card

Cheque or money order must be made payable in US$ to: ACM NOSSDAV 2004. For credit card transactions please fill out the information below:

Credit Card (check one): ☐ Visa ☐ MasterCard ☐ American Express

Credit card number:

Expiration Date:

Name on the credit card:

Total Charges Authorized (see chart above):

Signature:

Please note that any credit card information you fax or send via physical mail will be entered on-line into a secure payment server for processing. Signing above also indicates your approval of this transmission.

VISA INFORMATION: If you require a VISA to enter the Republic of Ireland, we can issue a letter of invitation to attend the Workshop. If you request this letter please **tick here** ☐. The letter will be mailed to the address given on your form.

NAME BADGES:
Please state precisely how you wish your name to appear on your conference name badge below.

 Name Badge

For further information please contact the program chairs:

Professor Cormac Sreenan and   **Dr Venkat Padmanabhan**

NOSSDAV 2004 Registration Form

You may register by filling the registration form below and submitting it via regular mail or fax.

Prof. Cormac Sreenan Attn: NOSSDAV Registration Department of Computer Science University College Cork Ireland	Email: a.obrien@cs.ucc.ie Voice: +353-21-490-2711 FAX: +353-21-490-3978

First Name:

Last Name:

Affiliation:

Email:

University/College Street Address:

Home Billing Address for Credit Card Transactions:

Street Address:

City: State/Province:

Zip/Postal Code: Country:

Your Further Contact Details:

Telephone: FAX:

ACM Member? Yes ☐ ACM #:   No ☐

Full-time Student? ☐ Yes ☐ No [Students must supply evidence of student
                    status (e.g. student ID) at the workshop]

DIETARY RESTRICTIONS: Vegetarian Other (specify): _____

NOSSDAV 2004

The 14th ACM International Workshop on Network and Operating Systems Support for Digital Audio and Video

STUDENT TRAVEL GRANTS

Thanks to the support from our sponsors, we expect to be in a position to offer several travel grants for full-time students to attend NOSSDAV 2004. Grants will be in the range US$700-1000 and contribute towards the costs of registration, travel, and lodging. Applications are welcome from all full-time students, but preference will be given to current PhD students. Female students and students from underrepresented groups are especially encouraged to apply. Since part of the funding comes from the US National Science Foundation, many of the grants will only be open to students (including international students) enrolled at US universities. Successful applicants who are based in the US will be required to fly to Ireland using a US airline. However, at least a few grants will be open to all students.

Applications should be submitted via email to Ann O'Brien with subject: "NOSSDAV travel grant". The deadline for receipt of applications is April 26 2004. There is no need to wait until the paper acceptance notification date of April 19. The preferred format for applications is a single PDF file, which should be sent as an attachment to an e-mail message to the address given above. Applications must include:

The student should email the following:

1. A current resume/CV
2. A letter written by the student, describing the student's research focus and accomplishments to date, indicating what conferences/workshops he/she has attended in the past, and explaining why/how he/she expects to benefit by attending NOSSDAV 2004
3. An itemized budget indicating expected travel cost (typically airfare) between the student's location and Cork, Ireland

The student's advisor should email the following:

4. A letter of recommendation confirming that the applicant is a full-time PhD student in good standing and explaining how the advisor expects the student to benefit from attending and why the student will need a travel grant to be able to attend.

Decisions will be made by a committee involving the NOSSDAV 2004 Co-Chairs. Decisions will be final. Award checks will be mailed shortly after the workshop has taken place, and after receipts have been submitted to justify the expenditure. Award recipients will be asked to arrange shared lodging to reduce costs.

Questions about the travel grant scheme should be sent to the NOSSDAV Co-Chairs at nossdav2004-pcchairs@cs.ucc.ie