3rd Workshop on I/O Virtualization (WIOV '11)
Sponsored by USENIX, the Advanced Computing Systems Association
http://www.usenix.org/wiov11

June 14, 2011 — Portland, OR

WIOV '11 will be part of the USENIX Federated Conferences Week, which will take place June 14–17, 2011.

Important Dates
Submissions due: *March 24, 2011, 11:59 p.m. PST*
Notification to authors: *April 11, 2011*
Electronic files of final papers due: *May 16, 2011*

Workshop Organizers

Program Co-Chairs
Sanjay Kumar, *Intel Labs*
Himanshu Raj, *Microsoft Research*
Karsten Schwan, *Georgia Institute of Technology*

Program Committee
Adhyas Avasthi, *Nokia Research Labs*
Muli Ben-Yehuda, *Technion and IBM Research*
Alan Cox, *Rice University*
Dilma Da Silva, *IBM Watson Research Center*
Renato Figueiredo, *University of Florida*
Ada Gavrilovska, *Georgia Institute of Technology*
Arkady Kanevsky, *VMware, Inc.*
Changhoon Kim, *Microsoft Corporation*
Oren Laadan, *Columbia University*
Ali Mashtizadeh, *VMware*
Rajesh Sankaran, *Intel Labs*
Jose Renato Santos, *HP Labs*

Overview
Virtualization technology has grown beyond server systems to include desktops, notebooks, and even mobile devices. The rich settings in which virtualized systems are used range from cloud computing infrastructures requiring access to high-end I/O devices like GPUs and networks to the many devices present in embedded and mobile systems. Consequent requirements imposed on I/O include the need for extreme-scale performance in high performance or low latency systems; fairness in device sharing in cloud and server systems, which includes online methods for understanding the I/O behavior of applications; trusted I/O both for cloud and for mobile systems; and low overhead and reliable device access in the mobile or embedded domains.

While I/O systems have a long history of using abstraction to shield applications from the intricacies of devices and storage systems, this workshop's focus is on the interplay of I/O with virtualization and cloud technologies. Our goal is to provide a forum to discuss the impact and challenges of I/O virtualization along multiple dimensions, including: the application domains in which virtualized solutions are used and the subsystems involved; platform or hardware support for I/O virtualization; the virtual machine monitor; the guest operating system; the processor, GPU, memory, and I/O subsystems. Also of interest are higher-level virtualization solutions, such as those concerning API virtualization, new virtual I/O APIs like those used for cloud storage, and innovative approaches to device virtualization in cloud computing and in the mobile domain. We welcome papers that describe new challenges and solutions in I/O virtualization and papers that describe novel approaches to solving known problems. The final program will consist of both reviewed submissions and invited talks. The invited talks will focus on open problems in I/O virtualization and will be accessible to a broad audience.

Topics
Topics of interest include but are not limited to:
- Hardware support for I/O virtualization
- Novel I/O device architectures for virtualization
- New software approaches to I/O virtualization
- Hardware and software methods for I/O device emulation
- Para-virtualized I/O device driver design for virtualization
- Virtual machine monitors' support for I/O
- Security and trust considerations for virtualized I/O, including hardware support
- Energy-efficient I/O virtualization
- Virtualized I/O in the cloud: API virtualization, challenges of large-scale I/O (performance, availability)
- Virtualization mechanisms for datacenter networking
- I/O monitoring and black box methods or system support for such functions

Submission Guidelines
Please submit an extended abstract in PDF format through the workshop submission Web form on the WIOV '11 Call for Papers Web site, http://www.usenix.org/wiov11/cfp. The extended abstract should be no more than 4 double-column pages using 10-point type on 12-point leading ("single-spaced"). Figures and references are not included in this 4-page limit. The committee also encourages the submission of short papers to update WIOV '11 attendees on new efforts or approaches. Please label such submissions accordingly.

All accepted papers will be available online to registered attendees before the workshop. If your paper should not be published prior to the event, please notify production@usenix.org. The papers will be available online to everyone beginning on the day of the workshop, June 14, 2011.

Simultaneous submission of the same work to multiple venues, submission of previously published work, or plagiarism constitutes dishonesty or fraud. USENIX, like other scientific and technical conferences and journals, prohibits these practices and may take action against authors who have committed them. See the USENIX Conference Submissions Policy at http://www. usenix.org/submissionspolicy. Questions? Contact your program co-chairs, wiov11chairs@usenix.org, or the USENIX office, submissionspolicy@usenix.org.

Papers accompanied by nondisclosure agreement forms will not be considered. Accepted submissions will be treated as confidential prior to publication on the USENIX WIOV '11 Web site; rejected submissions will be permanently treated as confidential.