Skip to main content

2012 USENIX Federated Conferences Week · June 12–15, 2012

ATC '12 Home

Organizers

Registration Information

Discounts

Tech Sessions

Poster Session

Activities

Birds-of-a-Feather Sessions

Hotel and Travel Information

Sponsors

Students

For Participants

Call for Papers

Past Conferences

SPONSORS

Gold Sponsor

vmware®

You are here

USENIX ATC '12 Technical Sessions

CONNECT

12 Tuesday	13 Wednesday	14 Thursday	15 Friday
	HotCloud '12		TaPP '12
WiAC '12		USENIX ATC '12	
UCMS '12		HotStorage '12	NSDR '12
USENIX Cyberlaw '12	WebApps '12		

All sessions will be held in Constitution A unless otherwise noted.

The full *USENIX ATC '12 Proceedings* are now available:

📄 atc12_proceedings.pdf
📄 atc12_erratum.pdf
📄 atc12_update.pdf
📄 atc12_cover__isbn.pdf
📄 atc12_frontmatter.pdf
📄 atc12-proceedings.epub
📄 atc12_errataslip.epub
📄 atc12-proceedings.mobi
📄 atc12_errataslip.mobi

Wednesday, June 13, 2012

8:30 a.m.–9:00 a.m.   Wednesday

Welcome and Awards

Program Co-Chairs: Gernot Heiser, *NICTA and University of New South Wales;* Wilson Hsieh, *Google*

9:00 a.m.–10:30 a.m.   Wednesday

Cloud

Constitution Ballroom

Session Chair: Wolfgang Schröder-Preikschat, *Friedrich-Alexander University Erlangen-Nuremberg*

Demand Based Hierarchical QoS Using Storage Resource Pools

Ajay Gulati and Ganesha Shanmuganathan, *VMware Inc.;* Xuechen Zhang, *Wayne State University;* Peter Varman, *Rice University*

View the video

📄 Gulati PDF

Listen to the mp3

View the slides

Erasure Coding in Windows Azure Storage

Cheng Huang, Huseyin Simitci, Yikang Xu, Aaron Ogus, Brad Calder, Parikshit Gopalan, Jin Li, and Sergey Yekhanin, *Microsoft Corporation*

Awarded Best Paper!

View the video

Huang PDF

Listen to the mp3

View the slides

Composable Reliability for Asynchronous Systems

Sunghwan Yoo, *Purdue University and HP Labs;* Charles Killian, *Purdue University;* Terence Kelly, *HP Labs;* Hyoun Kyu Cho, *HP Labs and University of Michigan;* Steven Plite, *Purdue University*

View the video

Yoo PDF

Listen to the mp3

View the slides

10:30 a.m.–11:00 a.m.   Wednesday

Break

Constitution Foyer

11:00 a.m.–12:30 p.m.   Wednesday

Multicore

Session Chair: Alexandra Fedorova, *Simon Fraser University*

Managing Large Graphs on Multi-Cores with Graph Awareness

Vijayan Prabhakaran, Ming Wu, Xuetian Weng, Frank McSherry, Lidong Zhou, and Maya Haridasan, *Microsoft Research*

View the video

Prabhakaran PDF

Listen to the mp3

View the slides

MemProf: A Memory Profiler for NUMA Multicore Systems

Renaud Lachaize, *UJF;* Baptiste Lepers, *CNRS;* Vivien Quéma, *GrenobleINP*

View the video

Lachaize PDF

Listen to the mp3

View the slides

Remote Core Locking: Migrating Critical-Section Execution to Improve the Performance of Multithreaded Applications

Jean-Pierre Lozi, Florian David, Gaël Thomas, Julia Lawall, and Gilles Muller, *LIP6/INRIA*

View the video

Lozi PDF

Listen to the mp3

View the slides

12:30 p.m.–1:30 p.m.   Wednesday

FCW Luncheon

Back Bay CD

1:30 p.m.–3:30 p.m.   Wednesday

Packet Processing
Session Chair: Eddie Kohler, *Harvard University*

The Click2NetFPGA Toolchain
Teemu Rinta-aho and Mika Karlstedt, *NomadicLab, Ericsson Research;* Madhav P. Desai, *Indian Institute of Technology (Bombay)*

    View the video

    Rinta-aho PDF

    Listen to the mp3

    View the slides

Building a Power-Proportional Software Router
Luca Niccolini, *University of Pisa;* Gianluca Iannaccone, *RedBow Labs;* Sylvia Ratnasamy, *University of California, Berkeley;* Jaideep Chandrashekar, *Technicolor Labs;* Luigi Rizzo, *University of Pisa and University of California, Berkeley*

    View the video

    Niccolini PDF

    Listen to the mp3

    View the slides

netmap: A Novel Framework for Fast Packet I/O
Luigi Rizzo, *Università di Pisa, Italy*
   Awarded Best Paper!

    View the video

    Listen to the mp3

    Rizzo PDF

Toward Efficient Querying of Compressed Network Payloads
Teryl Taylor, *UNC Chapel Hill;* Scott E. Coull, *RedJack;* Fabian Monrose, *UNC Chapel Hill;* John McHugh, *RedJack*

    View the video

    Taylor PDF

    Listen to the mp3

    View the slides

3:30 p.m.–4:00 p.m.   Wednesday

Break
Constitution Foyer

4:00 p.m.–5:30 p.m.   Wednesday

Plenary Session
Build a Linux-Based Mobile Robotics Platform (for Less than $500)

Mark Woodward, *Actifio*

Let's face it: Whether you are a child (of any age) or a serious researcher, robots are cool. And they can be extremely useful, as burgeoning work in ROV, UAV, search-and-rescue, mapping and surveying, and simple housecleaning has shown. In this talk we'll look at some of the nuts and bolts of building robots and show how to use basic technologies to build a mobile robotic platform for your application (or hobby) for less than $500. We'll compare available choices for batteries, power supplies, motors/wheels, and drive electronics. We will also discuss how to use the Arduino processor and to implement closed loop motor control, and we'll talk about user-space hardware I/O programming in Linux. If you've ever thought about building and/or using a robot, you'll not only be surprised at how easy it can be but will ask yourself why you haven't done it yet!

Mark is a software engineer and has worked in the industry for over 25 years. His first high-tech position was at Denning Mobile Robotics as an electrical engineer/technician. Not sticking to purely UNIX/Linux systems, he is also a contributing author of *Tricks of the Windows 3.1 Masters* and wrote assorted corporate publications on device driver design during his employ at Keithley Metrabyte. Since that time he has been a CTO during the dotcom boom and director of technology at a Web-based startup. He is currently working as a Principal Engineer at Actifio. While focusing mainly on software for his professional career, his passion remains robotics.

6:30 p.m.–8:00 p.m.   Wednesday

Joint USENIX ATC '12 and HotStorage '12 Poster Session and Happy Hour
Grand Ballroom

Session Chair: Emil Sit, *Hadapt*

The joint USENIX ATC '12 and HotStorage '12 poster session will be held in conjunction with a happy hour and will allow researchers to present recent and ongoing projects. Join us for drinks and hor d'oeuvres. The poster session is an excellent forum to discuss new ideas and get useful feedback from the community.

ATC '12 Poster Session
HotStorage '12 Poster Session

Thursday, June 14, 2012
8:30 a.m.–10:30 a.m.   Thursday

Security
Session Chair: Andreas Haeberlen, *University of Pennsylvania*

Body Armor for Binaries: Preventing Buffer Overflows Without Recompilation
Asia Slowinska, *Vrije Universiteit Amsterdam;* Traian Stancescu, *Google, Inc.;* Herbert Bos, *Vrije Universiteit Amsterdam*

View the video

Listen to the mp3

Slowinska PDF

Abstractions for Usable Information Flow Control in Aeolus
Winnie Cheng, *IBM Research;* Dan R.K. Ports and David Schultz, *MIT CSAIL;* Victoria Popic, *Stanford;* Aaron Blankstein, *Princeton;* James Cowling and Dorothy Curtis, *MIT CSAIL;* Liuba Shrira, *Brandeis;* Barbara Liskov, *MIT CSAIL*

View the video

Cheng PDF

Listen to the mp3

View the slides

Treehouse: Javascript Sandboxes to Help Web Developers Help Themselves
Lon Ingram, *The University of Texas at Austin and Waterfall Mobile;* Michael Walfish, *The University of Texas at Austin*

View the video

Ingram PDF

Listen to the mp3

View the slides

Cloud Terminal: Secure Access to Sensitive Applications from Untrusted Systems
Lorenzo Martignoni, *University of California, Berkeley;* Pongsin Poosankam, *University of California, Berkeley, and Carnegie Mellon University;* Matei Zaharia, *University of California, Berkeley;* Jun Han, *Carnegie Mellon University;* Stephen McCamant, Dawn Song, and Vern Paxson, *University of California, Berkeley;* Adrian Perrig, *Carnegie Mellon University;* Scott Shenker and Ion Stoica, *University of California, Berkeley*

View the video

Martignoni PDF

Listen to the mp3

View the slides

10:30 a.m.–11:00 a.m.   Thursday

Break
Constitution Foyer

11:00 a.m.–Noon   Thursday

Short Papers: Tools and Networking
Session Chair: Gernot Heiser, *NICTA and University of New South Wales*

Mosh: An Interactive Remote Shell for Mobile Clients
Keith Winstein and Hari Balakrishnan, *M.I.T. Computer Science and Artificial Intelligence Laboratory*

View the video

Winstein PDF

Listen to the mp3

View the slides

TROPIC: Transactional Resource Orchestration Platform in the Cloud
Changbin Liu, *University of Pennsylvania;* Yun Mao, Xu Chen, and Mary F. Fernández, *AT&T Labs—Research;* Boon Thau Loo, *University of Pennsylvania;* Jacobus E. Van der Merwe, *AT&T Labs—Research*

View the video

Liu PDF

Listen to the mp3

View the slides

Trickle: Rate Limiting YouTube Video Streaming
Monia Ghobadi, *University of Toronto;* Yuchung Cheng, Ankur Jain, and Matt Mathis, *Google*

View the video

Ghobadi PDF

Listen to the mp3

View the slides

Tolerating Overload Attacks Against Packet Capturing Systems
Antonis Papadogiannakis, *FORTH-ICS;* Michalis Polychronakis, *Columbia University;* Evangelos P. Markatos, *FORTH-ICS*

View the video

Papadogiannakis PDF

Listen to the mp3

View the slides

Enforcing Murphy's Law for Advance Identification of Run-time Failures
Zach Miller, Todd Tannenbaum, and Ben Liblit, *University of Wisconsin—Madison*

View the video

Miller PDF

Listen to the mp3

View the slides

Noon–1:30 p.m.   Thursday

FCW Luncheon

Back Bay CD

1:30 p.m.–3:30 p.m.   Thursday

Distributed Systems
Session Chair: Jon Howell, *Microsoft Research*

A Scalable Server for 3D Metaverses
Ewen Cheslack-Postava, Tahir Azim, Behram F.T. Mistree, and Daniel Reiter Horn, *Stanford University;* Jeff
Terrace, *Princeton University;* Philip Levis, *Stanford University;* Michael J. Freedman, *Princeton University*

View the video

Cheslack-Postava PDF

Listen to the mp3

View the slides

Granola: Low-Overhead Distributed Transaction Coordination
James Cowling and Barbara Liskov, *MIT CSAIL*

View the video

Listen to the mp3

Cowling PDF

High Performance Vehicular Connectivity with Opportunistic Erasure Coding
Ratul Mahajan, Jitendra Padhye, Sharad Agarwal, and Brian Zill, *Microsoft Research*

View the video

Mahajan PDF

Listen to the mp3

View the slides

Server-assisted Latency Management for Wide-area Distributed Systems
Wonho Kim, *Princeton University;* KyoungSoo Park, *KAIST;* Vivek S. Pai, *Princeton University*

View the video

Kim PDF

Listen to the mp3

View the slides

3:30 p.m.–4:00 p.m.   Thursday

Break
Constitution Foyer

4:00 p.m.–5:30 p.m.   Thursday

Deduplication
Session Chair: Haibo Chen, *Shanghai Jiao Tong University*

Generating Realistic Datasets for Deduplication Analysis
Vasily Tarasov and Amar Mudrankit, *Stony Brook University;* Will Buik, *Harvey Mudd College;* Philip Shilane, *EMC
Corporation;* Geoff Kuenning, *Harvey Mudd College;* Erez Zadok, *Stony Brook University*

View the video

Tarasov PDF

Listen to the mp3

View the slides

An Empirical Study of Memory Sharing in Virtual Machines
Sean Barker, *University of Massachusetts Amherst;* Timothy Wood, *The George Washington University;* Prashant
Shenoy and Ramesh Sitaraman, *University of Massachusetts Amherst*

View the video

Barker PDF

Listen to the mp3

View the slides

Primary Data Deduplication—Large Scale Study and System Design

Ahmed El-Shimi, Ran Kalach, Ankit Kumar, Adi Oltean, Jin Li, and Sudipta Sengupta, *Microsoft Corporation*

View the video

El-Shimi PDF

Listen to the mp3

View the slides

Friday, June 15, 2012

8:30 a.m.–10:30 a.m.   Friday

Languages and Tools

Session Chair: Angela Demke Brown, *University of Toronto*

Design and Implementation of an Embedded Python Run-Time System

Thomas W. Barr, Rebecca Smith, and Scott Rixner, *Rice University*

View the video

Barr PDF

Listen to the mp3

View the slides

AddressSanitizer: A Fast Address Sanity Checker

Konstantin Serebryany, Derek Bruening, Alexander Potapenko, and Dmitriy Vyukov, *Google*

View the video

Serebryany PDF

Listen to the mp3

View the slides

Software Persistent Memory

Jorge Guerra, Leonardo Mármol, Daniel Campello, Carlos Crespo, Raju Rangaswami, and Jinpeng Wei, *Florida International University*

View the video

Guerra PDF

Listen to the mp3

View the slides

Rivet: Browser-agnostic Remote Debugging for Web Applications

James Mickens, *Microsoft Research*

View the video

Mickens PDF

Listen to the mp3

View the slides

10:30 a.m.–11:00 a.m.   Friday

Break

Constitution Foyer

11:00 a.m.–Noon   Friday

Short Papers: Performance
Session Chair: Wilson Hsieh, *Google Inc.*

Wimpy Nodes with 10GbE: Leveraging One-Sided Operations in Soft-RDMA to Boost Memcached
Patrick Stuedi, Animesh Trivedi, and Bernard Metzler, *IBM Research, Zurich*

> View the video

> Stuedi PDF

> Listen to the mp3

> View the slides

Revisiting Software Zero-Copy for Web-caching Applications with Twin Memory Allocation
Xiang Song and Jicheng Shi, *Shanghai Jiao Tong University and Fudan University;* Haibo Chen, *Shanghai Jiao Tong University;* Binyu Zang, *Shanghai Jiao Tong University and Fudan University*

> View the video

> Song PDF

> Listen to the mp3

> View the slides

Seagull: Intelligent Cloud Bursting for Enterprise Applications
Tian Guo and Upendra Sharma, *UMASS Amherst;* Timothy Wood, *The George Washington University;* Sambit Sahu, *IBM Watson;* Prashant Shenoy, *UMASS Amherst*

> View the video

> Guo PDF

> Listen to the mp3

> View the slides

The Forgotten 'Uncore': On the Energy-Efficiency of Heterogeneous Cores
Vishal Gupta, *Georgia Tech;* Paul Brett, David Koufaty, Dheeraj Reddy, and Scott Hahn, *Intel Labs;* Karsten Schwan, *Georgia Tech;* Ganapati Srinivasa, *Intel Corporation*

> View the video

> Gupta PDF

> Listen to the mp3

> View the slides

Noon–1:00 p.m.   Friday

FCW Luncheon
Back Bay CD

1:00 p.m.–2:30 p.m.   Friday

OS
Session Chair: Emil Sit, *Hadapt*

Software Techniques for Avoiding Hardware Virtualization Exits
Ole Agesen, Jim Mattson, Radu Rugina, and Jeffrey Sheldon, *VMware*

> View the video

> Agesen PDF

> Listen to the mp3

> View the slides

AppScope: Application Energy Metering Framework for Android Smartphone Using Kernel Activity

Monitoring

Chanmin Yoon, Dongwon Kim, Wonwoo Jung, Chulkoo Kang, and Hojung Cha, *Yonsei University, Korea*

View the video

Yoon PDF

Listen to the mp3

View the slides

Gdev: First-Class GPU Resource Management in the Operating System

Shinpei Kato, Michael McThrow, Carlos Maltzahn, and Scott Brandt, *UC Santa Cruz*

View the video

Kato PDF

Listen to the mp3

View the slides

2:30 p.m.–3:00 p.m.	Friday

Break

Constitution Foyer

3:00 p.m.–5:00 p.m.	Friday

Replication

Session Chair: Andrew Birrell, *Microsoft Research*

Gnothi: Separating Data and Metadata for Efficient and Available Storage Replication

Yang Wang, Lorenzo Alvisi, and Mike Dahlin, *The University of Texas at Austin*

View the video

Wang PDF

ATC '12 Erratum for Wang PDF

Listen to the mp3

View the slides

Dynamic Reconfiguration of Primary/Backup Clusters

Alexander Shraer and Benjamin Reed, *Yahoo! Research;* Dahlia Malkhi, *Microsoft Research;* Flavio Junqueira, *Yahoo! Research*

View the video

Shraer PDF

Listen to the mp3

View the slides

Surviving Congestion in Geo-Distributed Storage Systems

Brian Cho, *University of Illinois at Urbana–Champaign;* Marcos K. Aguilera, *Microsoft Research Silicon Valley*

View the video

Cho PDF

Listen to the mp3

View the slides

Practical Hardening of Crash-Tolerant Systems

Miguel Correia, *IST–UTL/INESC–ID;* Daniel Gómez Ferro, Flavio P. Junqueira, and Marco Serafini, *Yahoo! Research*

View the video

Correia PDF

Listen to the mp3

View the slides

Our Sponsors

Privacy Statement | Contact Us | RSS Feed

© USENIX 2012