Conference Program

**Tuesday, July 1, 2014**

**Tutorials - morning sessions**

**T1: Protocols for Data Center Network Virtualization and Cloud Computing**  
Raj Jain, Washington University, St. Louis, USA

**T2: Infiniband and High-Speed Ethernet: Overview, Latest Status and Trends**  
Dhabaleswar K. Panda and Hari Subramoni, The Ohio State University, USA

**Tutorials - afternoon sessions**

**T3: OpenFlow, Software Defined Networking (SDN), and Network Function Virtualization (NFV)**  
Raj Jain, Washington University, St. Louis, USA

**T4: Flow and Congestion Controls for Multitenant Datacenters: Virtualization, Transport and Workload Impact**  
Mitchell Gusat, IBM Zurich Research Laboratory, Switzerland

**Wednesday, July 2, 2014**

**Keynote Talk**

**Speaker:** Kenneth Duda, Founder, Chief Technology Officer and Senior Vice President, Software Engineering, Arista Networks

**Session 1: Optical Networks**

**Dynamic Routing and Spectrum Allocation in Elastic Optical Networks with Mixed Line Rates**

Kaixuan Kuang (University of Electronic Science and Technology of China, P.R. China); Xiong Wang (University of Electronic Science and Technology of China, P.R. China); Sheng Wang (University of Electronic Science and Technology of China, P.R. China); Shizhong Xu (University of Electronic Science and Technology, P.R. China); Liu Hong (Huawei Technologies Co. Ltd., P.R. China); Gordon Ning Liu (Huawei Technologies Co. Ltd., P.R. China)

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A Subcarrier-Slot Partition Scheme for Wavelength Assignment in Elastic Optical Networks
Waya Fadini (The University of Electro-Communications, Japan); Eiji Oki (The University of Electro-Communications, Japan)
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Performance and Cost Evaluation of a Novel Optical Packet Switch with Input Concentrators
Shuna Yang (ITEM, Norwegian University of Science and Technology, Norway); Norvald Stol (Norwegian University of Science and Technology, Norway)
pp. 13-19

Survivable Lightpath Provisioning in Multi-Domain Optical Networks
Praphan Pavarangkoon (The University of Electro-Communications, Japan); Eiji Oki (The University of Electro-Communications, Japan)
pp. 20-25

Session 2: Architecture of High Performance Switches and Routers

On Iterative Scheduling for Input-queued Switches with a Speedup of 2-1/N
Bing Hu (Zhejiang University, P.R. China); Kwan Yeung (University of Hong Kong, Hong Kong); Chunzhi He (The University of Hong Kong, Hong Kong)
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JA-trie: Entropy-Based Packet Classification
Gianni Antichi (University of Cambridge, United Kingdom); Christian Callegari (University of Pisa, Italy); Andrew W. Moore (University of Cambridge, United Kingdom); Stefano Giordano (University of Pisa, Italy); Enrico Anastasi (University of Pisa, Italy)
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Binary Search on Trie Levels with a Bloom Filter for Longest Prefix Match
Jungwon Lee (EwhaWomans University, Korea); Hyesook Lim (EwhaWomans University, Korea)
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Session 3: Software Defined Networking

Load Balancing for Multiple Traffic Matrices Using SDN Hybrid Routing
Junjie Zhang (New York University Polytechnic School of Engineering, USA); Kang Xi (Polytechnic Institute of New York University, USA); Min Luo (Huawei Technologies, USA); H. Jonathan Chao (Polytechnic Institute of New York University, USA)
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Performance Evaluation of OpenFlow Controllers for Network Virtualization
Daniel Turull (KTH Royal Institute of Technology, Sweden); Markus Hidell (KTH Royal Institute of Technology, Sweden); Peter Sjodin (KTH, Sweden)
Cross-Control: A Scalable Multi-Topology Fault Restoration Mechanism Using Logically Centralized Controllers
Daniel Philip Venmani (Orange Labs, France); Yvon Gourhant (Orange Labs, France)
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Thursday, July 3, 2014

Keynote Talk

Speaker: Fred Baker, Cisco Fellow, Cisco

Panel: Network and Protocol (re)Design in the Age of Routine Attacks, Backdoors, and Government Snooping

Panel Chair: Mitchell Gusat, IBM Zurich Research Laboratory, Switzerland

Panelists:
Patrick Crowley, Washington University, USA
Michael Hrybyk, BCNET, Vancouver, Canada
Raj Jain, Washington University, St. Louis, USA
Andrew Warfield, University of British Columbia, Canada

Session 4: Routing

Dynamic Routing of Anycast and Unicast Traffic in Elastic Optical Networks with Various Modulation Formats - Trade-Off Between Blocking Probability and Network Cost
Michal Aibin (Wroclaw University Of Technology, Poland); Krzysztof Walkowiak (Wroclaw University of Technology, Poland)
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High Performance Multipath Routing for Data Centers
Nikolaos Ioa. Chrysos (IBM Research - Zurich, Switzerland); Mitchell Gusat (IBM Zurich Research Laboratory, Switzerland); Fredy Neesser (IBM Research GmbH, Switzerland); Cyriel Minkenberg (IBM Research - Zurich, Switzerland); Wolfgang E. Denzel (IBM Zurich Research Laboratory, Switzerland); Claude Basso (IBM Systems & Technology Group, Rochester, USA)
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A Scalable Framework for Segment Routing in Service Provider Networks: The Omnipresent Ethernet Approach
A Heuristic Routing Algorithm for Network Coding Aware 1+1 Protection Route Design for Instantaneous Recovery
Abu Hena Al Muktadir (The University of Electro-Communications, Japan); Eiji Oki (The University of Electro-Communications, Japan)
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Session 5: Best Paper Finalists

On Iterative Scheduling for Input-queued Switches with a Speedup of 2-1/N
Bing Hu (Zhejiang University, P.R. China); Kwan Yeung (University of Hong Kong, Hong Kong); Chunzhi He (The University of Hong Kong, Hong Kong)
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An Efficient Data Exchange Algorithm for Chained Network Functions
Ivano Cerrato (Politecnico di Torino, Italy); Guido Marchetto (Politecnico di Torino, Italy); Fulvio Risso (Politecnico di Torino, Italy); Riccardo Sisto (Politecnico di Torino, Italy); Matteo Virgilio (Politecnico di Torino, Italy)
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Performance and Cost Evaluation of a Novel Optical Packet Switch with Input Concentrators
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Friday, July 4, 2014

Session 6: Algorithms and Design Optimization

A Novel Regular Expression Matching Algorithm Based on Multi-Dimensional Finite Automata
Yangyang Gong (National Digital Switching System Engineering & Technology R&D Center, P.R. China); Qinrang Liu (National Digital Switching System Engineering & Technology R&D Center (NDSC), P.R. China); Xiangyu Shao (National Digital Switching System R&D Center, P.R. China); Cong Pan
An Efficient Data Exchange Algorithm for Chained Network Functions
Ivano Cerrato (Politecnico di Torino, Italy); Guido Marchetto (Politecnico di Torino, Italy); Fulvio Risso (Politecnico di Torino, Italy); Riccardo Sisto (Politecnico di Torino, Italy); Matteo Virgilio (Politecnico di Torino, Italy) pp. 98-105

Weighted Periodic Scheduling of a Shared Resource
Ori Rottenstreich (Technion, Israel); Yoram Revah (Industry- Marvell Israel, Israel) pp. 106-113

Session 7: Traffic Characterization, Measurement, and Engineering

The System for Delay Measurement in Ethernet Networks on NetFPGA Cards
Marek Michalski (Poznan University of Technology, Poland) pp. 114-119

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High-throughput Traffic Classification on Multi-core Processors
Da Tong (University of Southern California, USA); Yun Qu (University of Southern California, USA); Viktor K. Prasanna (University of Southern California, USA)
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Scaling Multi-Core Network Processors Without the Reordering Bottleneck
Alexander Shpiner (Technion, Israel); Isaac Keslassy (Technion, Israel); Rami Cohen (IBM Research - Haifa, Israel)
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Vukota Soskic (Telekom, Serbia); Aleksandra Smiljanic (Belgrade University, Serbia); Zoran Chicha (Belgrade University, Serbia)
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Line Graph Based Fast Rerouting and Reconfiguration for Handling Transient and Permanent Node Failures
Prashant Joshi (Intel Corporation, USA); Said Hamdioui (Delft University of Technology, The Netherlands)
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Blocking Probability of f-Cast Optical Banyan Networks on Vertical Stacking
Lisheng Ma (Chuzhou University, P.R. China); Xiaohong Jiang (Future University-Hakodate, Japan); Bin Wu (Tianjin University, P.R. China); Achille Pattavina (Politecnico di Milano, Italy)
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