GC19.3 Reducing Energy Consumption on Mobile Devices with WiFi Interfaces
Tao Zhang, Sunil Madhani, Provin Gurung and Eric van den Berg, Telcordia Technologies, USA
GC19.4 Spatio-Temporal Schedulers in IEEE 802.16
Sara Motahari, Ehsan Haghani and Shahrokh Valaee, University of Toronto, Canada
GC19.5 On the Performance Enhancement of Wireless LAN—A Multi-
Yue Fang, Northeastern University, USA, Daqing Gu, Mitsubishi Electric Research Laboratories, USA, A. Bruce McDonald, Northeastern University, USA, Jinyun Zhang, Mitsubishi Electric Research Laboratories, USA

GC20 Load Balancing and Resource Fairness

Thursday, 1 December 2005 • 4:00–5:45PM

SessionChair: **Yang Yang**, University of College London, UK

GC20.1 Design of an Optimized Load Sharing and Distributed Multimedia-oriented Streaming System
Min Wang, Beijing University of Posts and Telecommunications, China
Geng-Sheng Kuo, National Chengchi University, Taiwan
GC20.2 Improvement of Resilient Packet Ring Fairness
Fredrik Davik, University of Oslo, Norway
Amund Kvalbein and Stein Gjessing, Simula Research Laboratory, Norway
GC20.3 Location Dependent Dynamic Load Balancing
Evsen Yanmaz and Ozan K. Tonguz, Carnegie Mellon University, USA
GC20.4 An Analytical Model for Fair Rate Calculation in Resilient Packet Rings
Arash Shokrani, Ioannis Lambadaris and Jérôme Talim, Carleton University, Canada
GC20.5 Is There an Optimum Dynamic Load Balancing Scheme?
Evsen Yanmaz, Ozan K. Tonguz and Ragunathan Rajkumar, Carnegie Mellon University, USA

GC21 Switch Architectures

Thursday, 1 December 2005 • 4:00–5:45PM

Session Chair: **Wojciech Kabacinski**, Poznan University of Technology, Poland

GC21.1 Reducing the Implementation Complexity of Combined Input and Output Queued Switches by Using Extended Maximal Matching Algorithm
Yang Xu, Wei Li, Tsinghua, Beibei Wu, Tsinghua, Wenjie Li, Tsinghua and Bin Liu, Tsinghua University, PR China
GC21.2 Performance Evaluation of the Multiple Output Queueing Switch under Different Traffic Patterns
Anna Baranowska, Grzegorz Danilewicz, Wojciech Kabaci_ski, Janusz Kleban, Damian Parniewicz and Patryk Abrowski Pozna_ University of Technology, Poland
GC21.3 Scheduling in Switches with Small Internal Buffers
Nikos Chrysos and Manolis Katevenis, FORTH-ICS, Greece
GC21.4 Achieving Fairness and Throughput for Best-Effort Traffic in Input-Queued Crossbar Switches
Xiao Zhang and Laxmi N. Bhuyan, University of California, Riverside, USA
GC21.5 Guaranteed Smooth Switch Scheduling with Low Complexity
Satya R. Mohanty and Laxmi N. Bhuyan, University of California, Riverside, USA

Advances for Network and Internet Symposium

Chair: John Lockwood, Washington University in St. Louis, USA
Vice Chairs: George Kesidis, Pennsylvania State University, USA and Changcheng Huang, Carleton University, Canada

NI01 Overlays Peer to Peer

Tuesday, 29 November 2005 • 10:30AM–12:15PM

Session Chair: **Todd Sproull**, Washington University in St. Louis

NI01.1 Multimedia Object Placement for Hybrid Transparent Data Replication
Keqiu Li, Japan Advanced Institute of Science and Technology, Japan
Hong Shen, Japan Advanced Institute of Science and Technology, Japan; University of Science and Technology of China, China
Francis Y. L. Chin and Liusheng Huang, University of Science and Technology of China, China
NI01.2 Constructing a Proximity-Aware Power Law Overlay Network
Jianjun Zhang, Ling Liu and Calton Pu, Georgia Institute of Technology, USA
NI01.3 Preference-Aware Overlay Topologies for Group Communication
Tianying Chang, Jinliang Fan and Mustaque Ahamad, Georgia Institute of Technology, USA, George Popescu and Zhen Liu, IBM T.J. Watson Research Center, USA
NI01.4 A Dynamic SSM Source Discovery Protocol
Mickaël Hoerdt and Jean-Jacques Pansiot, Université Louis Pasteur, France
NI01.5 Shaking Service Requests in Peer-to-Peer Video Systems
Ying Cai, Ashwin Natarajan and Johnny Wong, Iowa State University, USA

NI02 Multicast, Multimedia

Tuesday, 29 November 2005 • 4:00–5:45PM

Session Chair: **Yanping Zhao**, Univ. of Arkansas at Little Rock

NI02.1 An Auto-Configurable Hybrid Approach to Multicast Congestion Control
M. Rodríguez-Pérez, S. Herrería-Alonso, M. Ferández-Veiga and C. López-García, E.T.S.E. Telecomunicación, Spain
NI02.2 Optimization Method of Spanning Tree Aggregation for Hierarchical QoS Routing
Lei Lei, Yuefeng Ji and Kan Zheng, Beijing University of Posts and Telecommunications, PR China
NI02.3 Impact of Receiver Cheating on the Stability of ALM Tree
Dan Li, Yong Cui, Ke Xu and Jianping Wu, Tsinghua University, China
NI02.4 Aggregation of Bitmapped Feedback for Improved Reliable Multicast Scalability
Oliver Holland and A. Hamid Aghvami, King's College London, UK
NI02.5 Profit Oriented Multichannel Resource Management for Integrated Internet and DVB-T Network
Guowang Miao and Zhisheng Niu, Tsinghua University, PR China

NI03 Scheduling

Wednesday, 30 November 2005 • 10:30AM–12:15PM

Session Chair: **James Moscola**, Washington University in St. Louis

NI03.1 On Optimizing Token Bucket Parameters at the Network Edge under Generalized Processor Sharing (GPS) Scheduling
Dusit Niyato,Jeffrey Diamond and Ekram Hossain, University of Manitoba and TRLabs, Canada

NI03.2 Hierarchical Shaped Deficit Round-Robin Scheduling
Soranun Jiwasurat, George Kesidis, David J. Miller, The Pennsylvania State University, USA
NI03.3 Achieving Stability in Networks of Input-Queued Switches using a Local Online Scheduling Policy
Shubha U. Nabar, Neha Kumar, Mohsen Bayati and Abtin Keshavarzian, Stanford University, USA
NI03.4 Response Time Analysis of a Middleware Event Demultiplexing Pattern for Network Services
Swapna S. Gokhale, University of Connecticut, USA, Aniruddha S. Gokhale, Vanderbilt University, USA, Jeff Gray, University of Alabama at Birmingham, USA

NI04 Routing

Wednesday, 30 November 2005 • 4:00–5:45PM

Session Chair: **Xian Liu**, University of Arkansas at Little Rock

NI04.1 Evaluating the Impact of Flooding Schemes on Best-Effort Traffic
C. Chi, X. Sun and Y. Qian, Beijing University of Posts and Telecommunications, PR China
NI04.2 Local Search Algorithms for Reserved Delivery Subnetwork Configuration Problems with Cycle and Bicycle Reduction
Ruibiao Qiu and Jonathan S. Turner, Washington University, USA
NI04.3 Preemption-Aware Routing for QoS-Enabled Networks
Iftekhar Ahmad, Joarder Kamruzzaman and Srinivas Aswathanarayaniah, Monash University, Australia
NI04.4 On Direct Routing in the Valiant Load-Balancing Architecture
Huan Liu and Rui Zhang-Shen, Stanford University, USA
NI04.5 Switching Time Measurement and Optimization Issues in GNU Quagga Routing Software
V. Eramo, M. Listanti and A. Cianfrani, University of Roma "La Sapienza", Italy

NI05 Network Processing

Thursday, 1 December 2005 • 10:30AM–12:15PM

Session Chair: **John W Lockwood**, Washington University in St. Louis

NI05.1 Design a Simple and High Performance Switch Using a Two-Stage Architecture
Chih-Ying Tu, Cheng-Shang Chang, Duan-Shin Lee and Ching-Te Chiu, National Tsing Hua University, ROC
NI05.2 Fast Packet Classification Using Bit Compression
Chia-Ren Hsu, Chien Chen and Chun-Yuan Lin, National Chiao Tung University, ROC
NI05.3 Optimal Network Processor Topologies for Efficient Packet Processing
Jingnan Yao, Yan Luo, Laxmi Bhuyan and Ravishankar Iyer, Intel Corporation, USA
NI05.4 Transparent TCP Acceleration Through Network Processing
Tilman Wolf, Shulin You and Ramaswamy Ramaswamy, University of Massachusetts, USA
NI05.5 Diversifying the Internet
Jonathan S. Turner and David E. Taylor, Washington University in Saint Louis, USA; Exegy Inc.

NI06 Advances for Networks & Internet Session

Thursday, 1 December 2005 • 2:00–5:00PM

Session Chair: **John W. Lockwood**, Washington University in St. Louis

NI06.1 Signaling Performance of SIP-based VoIP: A Measurement-based Approach
Swapna S. Gokhale and Jijun Lu, University of Connecticut, USA
NI06.2 A Source Model of Video Traffic Based on Full-Length VBR MPEG4 Video Traces
Yang Sun and John N. Daigle, University of Mississippi, USA
NI06.3 Convolutional Coding for Resilient Packet Header Compression
Vijay A. Suryavanshi and Aria Nosratinia, University of Texas at Dallas, USA
NI06.4 Applying PR-SCTP to Transport SIP Traffic
Xiao Lei Wang and Victor C. M. Leung, The University of British Columbia, Canada
NI06.5 Fractional Noise in Experimental Measurements of IP Traffic in a Metropolitan Area Network
Stefano Bregni and Walter Erangoli, Politecnico di Milano, Italy
NI06.6 Performance Modeling of SCTP Multihoming
Shaojian Fu and Mohammed Atiquzzaman, University of Oklahoma, USA

NI07 MPLS, VPN

Thursday, 1 December 2005 • 2:00–3:45PM

Session Chair: **Zhisheng Niu**, Tsinghua University

NI07.1 Signalling Protocols in Diffserv-aware MPLS Networks: Design and Implementation of RSVP-TE Network Simulator
D. Adami, C. Callegari, S. Giordano, F. Mustacchio, M. Pagano and F. Vitucci, University of Pisa, Italy
NI07.2 Integrating Traffic Aggregation Mechanism into SIP-based IP Telephony over MPLS Network
Bo Rong, Bernard Tremblay, Maria Bennani and Michel Kadoch, Universite du Quebec, Canada
NI07.3 Routing Algorithm for Provisioning Symmetric Virtual Private Networks in the Hose Model
Tat Wing Chim, King-Shan Lui, Kwan L. Yeung and Chi Ping Wong, The University of Hong Kong, Hong Kong
NI07.4 Enhanced Disruption and Fault Tolerant Network Architecture for Bundle Delivery (EDIFY)
Mooi Choo Chuah, Liang Cheng and Brian D. Davison, Lehigh University, USA
NI07.5 Distributed Optimization of Converged IP-Optical Networks
Anwar Elwalid, Debasis Mitra and Qiong Wang, Bell Laboratories, Lucent Technologies, USA

NI08 Congestion Control

Thursday, 1 December 2005 • 4:00–5:45PM

Session Chair: **Young Cho**, Washington University in St. Louis

NI08.1 Utility Max–Min Flow Control Using Slope-Restricted Utility Functions
Jeong-woo Cho and Song Chong, Korea Advanced Institute of Science and Technology, Korea
NI08.2 RVMCP: TCP Vegas-like Congestion Control for Reliable Multicast
Marta Solera Delgado, University of Malaga, Spain
Sebastià Sallent Ribes, Polytechnic University of Catalonia, Spain
NI08.3 A Refinement to Improve TCP Veno Performance under Bursty Congestion
ZiXuan Zou, ChengPeng Fu and Bu Sung Lee, Nanyang Technological University, Singapore

NI08.4 Optimizing Network Resource Sharing in Grids
L. Marchal, École Normale Supérieure de Lyon, France
P. Vicat-blanc Primet, École Normale Supérieure de Lyon, France
Y. Robert and J. Zeng, École Normale Supérieure de Lyon, France

NI09 QoS
Thursday, 1 December 2005 • 4:00–5:45PM

Session Chair: **Kenji Yoshigoe**, University of Arkansas at Little Rock

NI09.1 Information Exchange in DiffServ Pricing
Nan Jin, University of California, Irvine, USA, Scott Jordan, University of California, Irvine, USA
NI09.2 A New Fair Bandwidth Allocation Algorithm for Multimedia Multicasting in DiffServ
Lie Qian, Yiyan Tang and Yuke Wang, University of Texas at Dallas, USA
Bashar Bou-Diab and Wladek Olesinski, Alcatel, Canada
NI09.3 End-to-End Delay Satisfaction Balancing Routing
Mohamed Ashour and Tho Le-Ngoc, McGill University, Canada
NI09.4 On Designing Traffic Controller for AQM Routers Based on Robust U-Analysis
Qiang Chen and Oliver W. W. Yang, University of Ottawa, Canada
NI09.5 QoS-Aware Object Replica Placement in CDNs
Zhiyong Xu, Suffolk University, USA, Laxmi Bhuyan, University of California, Riverside, USA

Autonomic Internet Symposium

Chair: **Marco Ajmone Marsan**, Politecnico di Torino, Italy
Vice Chairs: **Marcus Brunner**, NEC Europe Ltd., Germany, **Wanjiun Liao**, National Taiwan University and **Claudio Casetti**, Politecnico di Torino, Italy

AN01 Peer-to-Peer Communications - I
Tuesday, 29 November 2005 • 10:30AM–12:15PM

Session Chair: **Marco Ajmore Marsan**, Politecnico di Torino, Italy

AN01.1 Search Time in Unstructured Peer-to-Peer Networks with Clustered Demands
Saurabh Tewari and Leonard Kleinrock, University of California at Los Angeles, USA
AN01.2 Gambling Heuristic on a Chord Ring
Dario Rossi, Politecnico di Torino, Italy
Ion Stoica, University of California, Berkeley, USA
AN01.3 Harnessing SIP for Autonomous Mobile Peer-to-Peer Networking
Douglas Howie, Erkki Harjula, Jussi Ala-Kurikka and Mika Ylianttila, University of Oulu, Finland
AN01.4 On the Stability of Chord-based P2P Systems
Andreas Binzenhöfer, Dirk Staehle, and Robert Henjes, University of Würzburg, Germany

AN02 Routing
Tuesday, 29 November 2005 • 2:00–3:45PM

Session Chair: **Kohei Shiomoto**, NTT, Japan

AN02.1 Route Optimization among a Group of Multihomed Stub Networks
Yong Liu and A. L. Narasimha Reddy, Texas A&M University, USA
AN02.2 Measurement of Highly Active Prefixes in BGP
Ricardo V. Oliveira and Rafit Izhak-Ratzin, University of California, Los Angeles, USA, Beichuan Zhang, University of Arizona, USA
Lixia Zhang, University of California, Los Angeles, USA
AN02.3 Predictive Mobility and Location-Aware Routing Protocol in Mobile Ad hoc Networks
Tse-En Lu and Kai-Ten Feng, National Chiao Tung University, Taiwan
AN02.4 On Routing Asymmetry in the Internet
Yihua He, Michalis Faloutsos and Srikanth Krishnamurthy, University of California, Riverside, USA, Bradley Huffaker, University of California, San Diego, USA
AN02.5 InterSensorNet: Strategic Routing and Aggregation
Min-You Wu, Shanghai Jiao Tong University, China
Wei Shu, The University of New Mexico, USA

AN03 Overlay Networks
Tuesday, 29 November 2005 • 4:00–5:45PM

Session Chair: **Miki Yamamoto**, Osaka University, Japan

AN03.1 ServerCast: Efficient Cooperative Bulk Data Distribution Scheme for Content Distribution Networks
Tin-Man T. Kwan and Kwan L. Yeung, University of Hong Kong, PR China
AN03.2 Last Mile Problem in Overlay Design
Parijat Dube, Zhen Liu, Sambit Sahu and Jeremy Silber, IBM T.J. Watson Research Center, USA
AN03.3 TACON: Tactical Construction of Overlay Networks
Jawwad Shamsi, Monica Brockmeyer and Liya Abebe, Wayne State University, USA
AN03.4 Application Layer Addressing, Routing and Naming Framework for Overlays
Damien Magoni and Pascal Lorenz, Université de Haute Alsace, France
AN03.5 A New Peer-to-Peer Overlay Network for Scalable Content-based Publish/Subscribe Systems
Yongjin Choi, Hyunbin Lee, Keuntae Park, Daeyeon Park, Korea Advanced Institute of Science and Technology, Korea

AN04 Network Management
Tuesday, 29 November 2005 • 4:00–5:45PM

Session Chair: **Nelson Fonseca**, University Estadual de Campinas, Brazil

AN04.1 Autonomic Power Management Schemes for Internet Servers and Data Centers
Lykomidis Mastroleon, Nicholas Bambos, Christos Kozyrakis and Dimitris Economou, Stanford University, USA
AN04.2 A Unified Resource Switching for Real-Time Communication in an Ubiquitous Networking Environment
Naoki Imai, Manabu Isomura and Hiroki Horiuchi, KDDI R&D Laboratories Inc., Japan
AN04.3 Toward an Autonomic Control of Wireless Access Networks
N. Blefari-Melazzi, University of Rome "Tor Vergata", Italy
D. Di Sorte, M. Femminella and G. Reali, University of Perugia, Italy
AN04.4 Using Feedback Control to Manage QoS for Clusters of Servers Providing Service Differentiation
Wael Hosny Fouad Aly and Hanan Lutfiyya, The University of Western Ontario, Canada
AN04.5 Evaluation of Router Address Autoconfiguration Time during Network Initialization for Centralized and Distributed Schemes
Josep Mangues-Bafalluy, Centre Tecnològic de Telecom. de Catalunya, Spain, Gabriel Martínez-Pérez, Universitat Politècnica de Catalunya, Spain
Guillaume Chelius, CITI/ARES–INRIA, France