

2010 IEEE 18th International Workshop on Quality of Service (IWQoS 2010)

**Beijing, China
16 – 18 June 2010**



**IEEE Catalog Number: CFP10IWQ-PRT
ISBN: 978-1-4244-5987-2**

TABLE OF CONTENTS

SESSION 1: OVERLAY AND PEER-TO-PEER NETWORKS

Distributed Tries for Load Balancing in Peer-to-Peer Systems	1
<i>G. Park, M. Kwon</i>	
BitTorrent Under a Microscope: Towards Static QoS Provision in Dynamic Peer-to-Peer Networks	10
<i>T.H. Luan, X. Shen, D.H.K. Tsang, H. Kong</i>	
SPoIM: A Close Look at Pollution Attacks in P2P Live Streaming	19
<i>E. Lin, D.M. Nunes De Castro, M. Wang, J. Aycocck</i>	
PPVA: A Universal and Transparent Peer-to-Peer Accelerator for Interactive Online Video Sharing	28
<i>K. Xu, H. Li, J. Liu, W. Zhu, W. Wang</i>	
Dynamic File-selection Policies for Bundling in BitTorrent-like Systems	37
<i>L. Nissan, N. Carlsson, Z. Li, C. Williamson, S. Zhang</i>	
APEX: A Personalization Framework to Improve Quality of Experience for DVD-like Functions in P2P VoD Applications	46
<i>T. Xu, B. Ye, Q. Wang, W. Li, S. Lu, X. Fu</i>	

SESSION 2: DATA CENTERS AND ENERGY SAVINGS

vPnP: Automated Coordination of Power and Performance in Virtualized Datacenters	55
<i>J. Gong, C. Xu</i>	
Virtual Batching: Request Batching for Energy Conservation in Virtualized Servers	64
<i>Y. Wang, R. Deaver, X. Wang</i>	
A Switch-Based Approach to Throughput Collapse and Starvation in Data Centers	73
<i>A. Shpiner, I. Keslassy</i>	
VMRPC: A High Efficiency and Light Weight RPC System for Virtual Machines	82
<i>H. Chen, L. Shi, J. Sun</i>	
An Effective Feedback-Driven Approach for Energy Saving in Battery Powered Systems	91
<i>D. Le, H. Wang</i>	
Dynamic Duty Cycle Control for End-to-End Delay Guarantees in Wireless Sensor Networks	100
<i>Xiaodong Wang, Xiaorui Wang, G. Xing, Y. Yao</i>	

SESSION 3: SCHEDULING, RESOURCE MANAGEMENT, QUEUE MANAGEMENT, ADMISSION CONTROL

Providing Fairness Between TCP NewReno and TCP Vegas with RD Network Services	109
<i>M. Podlesny, C. Williamson</i>	
Statistical End-to-end Performance Bounds for Networks under Long Memory FBM Cross Traffic	118
<i>A. Rizk, M. Fidler</i>	
QoS-Revenue Tradeoff with Time-Constrained ISP Pricing	127
<i>Y. Wu, P.H. Hande, H. Kim, M. Chiang, D.H.K. Tsang</i>	
DAWN: Energy Efficient Data Aggregation in WSN with Mobile Sinks	136
<i>S. Tang, J. Yuan, X.Y. Li, Y. Liu, G. Chen, M. Gu, J. Zhao, G. Dai</i>	
On the Complexity of Maximizing the Minimum Shannon Capacity in Wireless Networks by Joint Channel Assignment and Power Allocation	145
<i>M. Fallgren</i>	
A Group-based Cooperative Medium Access Control Protocol for Cognitive Radio Networks	152
<i>Y. Liu, R. Yu, Y. Zhang, S. Xie</i>	

SESSION 4: WIRELESS AD HOC, MESH, AND SENSOR NETWORKS

Exploiting Use of a New Performance Metric for Construction of Robust and Efficient Wireless Backbone Network	161
<i>Z. Zhang, Q. Ma, X. Wang</i>	

Delay Constrained Optimal Relay Placement for Planned Wireless Sensor Networks	170
<i>A. Bhattacharya, A. Kumar</i>	
Path Diversified Retransmission for TCP over Wireless Mesh Networks	179
<i>X. Guo, J. Liu</i>	
Fish a Lake: Fast Release/Capture Sampling in Large-scale Sensor Networks	188
<i>S. Peng, G. Xing, S. Li, W. Jia, Y. Peng</i>	
RC-MAC: A Receiver-Centric Medium Access Control Protocol for Wireless Sensor Networks	196
<i>P. Huang, C. Wang, L. Xiao, H. Chen</i>	
Wireless Sensor Network Deployment in Mobile Phones Assisted Environment	205
<i>Z. Ruan, E.C.H. Ngai, J. Liu</i>	

SHORT PAPER SESSION

Evaluating the Impact of Data Center Network Architectures on Application Performance in Virtualized Environments	214
<i>Y. Zhang, A. Su, G. Jiang</i>	
Traffic Identification Using Flexible Neural Trees	219
<i>L. Peng, H. Zhang, B. Yang, Y. Chen, M.T. Qassrawi, G. Lu</i>	
Resource Allocation for QoS Multiuser MIMO with Zero Forcing and MMSE Beamforming	224
<i>Z. Rosberg, A. Cantoni, R.P. Liu</i>	
Avidity-Model based Clonal Selection Algorithm for Network Intrusion Detection	230
<i>W. Tang, X. Yang, X. Xie, L. Peng, C. Youn, Y. Cao</i>	
An Automatic Performance Testing Method Based on a Formal Model for Communicating Systems	235
<i>L. Eros, T. Csondes</i>	
Measurement and Analysis of End-to-end Dependability Characteristics in the Global Network	240
<i>E.S. Myakomykh, B.E. Helvik, O.J. Wittner, O. Kvittem, J.K. Hellan, T. Skjesol, A. Oslebo</i>	
Engineering an Autonomous Fuzzy Controller for QoS Control in Distributed Services	246
<i>D. Li, D. Levy</i>	
Routing with Uncertainty in Wireless Mesh Networks	251
<i>F. Chen, J. Liu, Z. Li, Y. Wang</i>	
Intelligent Price-based Congestion Control for Communication Networks	256
<i>H. Wang, Z. Tian</i>	
Macro-Scheduling of Base Stations for Video-on-Demand Flows in WiMAX Networks	261
<i>S. Mitra, U. Devi, P. Gupta, M. Chetlur, S. Kalyanaraman</i>	
Effective Traffic Control in IEEE 802.16j WiMAX Networks	267
<i>H. Wang, W. Jia</i>	
10Gbps Implementation of TLS/SSL Accelerator on FPGA	272
<i>T. Isobe, S. Tsutsumi, K. Seto, K. Aoshima, K. Kariya</i>	

POSTERS SESSION

Efficient Parallel Searching with TCAMs	278
<i>B. Zhang, J. Wu, Q. Li, J. Yang</i>	
Traffic-Aware Base Station Sleeping in Dense Cellular Networks	280
<i>J. Gong, S. Zhou, Z. Niu, P. Yang</i>	
Lightweight IP Fast Reroute with Tunnel-AT	282
<i>L. Pan, M. Xu, Q. Li, D. Jen</i>	
A Measure of Growth of User Community in OSNs	284
<i>L. Gao, J. Yang, H. Wang, H. Zhang</i>	
Exploring BitTorrent Peer Distribution via Hybrid PlanetLab-Internet Measurement	286
<i>H. Wang, J. Liu, K. Xu</i>	
Efficient and Fine-Grained Sharing of Encrypted Files	288
<i>S. Fu, X. Liao, L. He, C. Huang, X. Tang, S. Zheng</i>	
A Clone of Social Networks to Decentralized Bootstrapping P2P Networks	290
<i>J. Luo, B. Xiao, Z. Yang, S. Zhou</i>	
Exploring the Practicability of Mobile Sensors in Complex Environment Surveillance	292
<i>S. Li, S. Zheng, X. Liao, S. Peng</i>	
A Smart RFID System	294
<i>M. Chen, R. Huang, Y. Zhang, H. Chao</i>	

Handling Triangle Inequality Violations in Euclidean Distance based Network Coordinate Systems	296
<i>C. Dong, G. Wang, Y. Chen, B. Deng, X. Li</i>	
MPIActor: A Thread-based MPI Program Accelerator	298
<i>Z. Liu, J. Song, S. Peng</i>	
Data Sweeper: A Proactive Filtering Framework for Error-Bounded Sensor Data Collection	300
<i>D. Wang, J. Liu, J. Xu</i>	
Measurements, Analysis and Modeling of Private Tracker Sites	302
<i>X. Chen, X. Chu, Y. Jiang, F. Ren</i>	
Impacts of Duty-Cycle on TPGF Geographical Multipath Routing in Wireless Sensor Networks	304
<i>L. Shu, Z. Yuan, T. Hara, L. Wang, Y. Zhang</i>	
Research on Uncertain Weight of Web Service QoS Criteria	306
<i>Z. Fan, L. Zhang, J. Shen, S. Wang, X. Qiu</i>	
UPnP QoS and Queuing in Home Networks	308
<i>L. Brewka, H. Wessing, L. Dittmann</i>	
Power Aware Job Scheduling with QoS Guarantees Based on Feedback Control	310
<i>C. Jiang, X. Xu, J. Wan, J. Zhang, X. You, R. Yu</i>	

SESSION 6: MEASUREMENT, EVALUATION, ADAPTATION AND VERIFICATION

Tolerable Interference in Multi-Channel Sensor Networks: a Measurement Study	312
<i>X. Xu, J. Luo, Q. Zhang</i>	
Evaluations of MadWifi MAC Layer Rate Control Mechanisms	321
<i>W. Yin, K. Bialkowski, J. Indulska, P. Hu</i>	
Analyzing Router Performance Using Network Calculus with External Measurements	330
<i>M. Bredel, Z. Bozakov, Y. Jiang</i>	
Characterizing Tight-Link Bandwidth of Multi-Hop Paths Using Probing Response Curves	339
<i>S. Kang, D. Loguinov</i>	
SureCall: Towards Glitch-Free Real-Time Audio/Video Conferencing	348
<i>A. Mondal, R. Cutler, C. Huang, J. Li, A. Kuzmanovic</i>	

SESSION 7: ENERGY SAVING AND QUALITY EVALUATION METRICS AND METHODOLOGIES

Energy Efficient Cooperation in Underwater Sensor Networks	357
<i>H. Yang, F. Ren, C. Lin, B. Liu</i>	
Streaming Scalable Video over WiMAX Networks	366
<i>S. Sharangi, R. Krishnamurthi, M. Hefeeda</i>	
On the Model Transform in Stochastic Network Calculus	375
<i>K. Wu, Y. Jiang, J. Li</i>	
DREAM: On the Reaction Delay in Large Scale Wireless Networks with Mobile Sensors	384
<i>S. Tang, X. Li, J. Yuan, C. Wang, G. Chen, C. Jiang</i>	
Author Index	