

Table of Contents

Session I: Advance Reservation Systems	1
<i>Advance Reservations for Predicted Service</i>	
M. Degermark, T. Köhler, S. Pink and O. Schelén	3
<i>Distributed Advance Reservation of Real-Time Connections</i>	
D. Ferrari, A. Gupta and G. Ventre	16
<i>Issues of Reserving Resources in Advance</i>	
L.C. Wolf, L. Delgrossi, R. Steinmetz, S. Schaller and H. Wittig	28
Session II: Operating Systems Support	39
<i>A Computational and Engineering View on Open Distributed Real-Time Multimedia Exchange</i>	
P. Leydekkers, V. Gay and L. Franken	41
<i>Support for User-Centric Modular Real-Time Resource Management in the Rialto Operating System</i>	
M.B. Jones, P.J. Leach, R.P. Draves and J.S. Barrera,III	53
<i>A Rate-Based Execution Abstraction for Multimedia Computing</i>	
K. Jeffay and D. Bennett	64
<i>VuSystem Performance Measurements</i>	
C.J. Lindblad	76
<i>Design of Universal Continuous Media I/O</i>	
C.D. Cranor and G.M. Parulkar	80
<i>A New OS Architecture for High Performance Communication over ATM Networks—Zero-Copy Architecture—</i>	
H. Kitamura, K. Taniguchi, H. Sakamoto and T. Nishida	84
Session III: Resource Management and Quality of Service	88
<i>Meeting Arbitrary QoS Constraints Using Dynamic Rate Shaping of Coded Digital Video</i>	
A. Eleftheriadis and D. Anastassiou	89
<i>Dynamic QoS Management for Scalable Video Flows</i>	
A. Campbell, D. Hutchinson and C. Aurrecoechea	101

<i>Dynamic Service Aggregation for Efficient Use of Resources in Interactive Video Delivery</i>	
D. Venkatesh and T.D.C. Little	113
<i>Evaluation of QoS-Control Servers on Real-Time Mach</i>	
K. Kawachiya, M. Ogata, N. Nishio and H. Tokuda	117
<i>System-Level Resource Management for Network-Based Multimedia Applications</i>	
L.C. Schreier and M.B. Davis	121
Session IV: A NOSSDAV Retrospective	125
Session V: Audio and Video Systems	129
<i>An End to End Software Only Scalable Video Delivery System</i>	
N. Chaddha, G.A. Wall and B. Schmidt	130
<i>A Distributed Real-Time MPEG Audio Player</i>	
S. Cen, C. Pu, R. Staehli, C. Cowan and J. Walpole	142
<i>Analysis of Audio Packet Loss in the Internet</i>	
J.-C. Bolot, H. Crépin and A.V. Garcia	154
<i>Digital Audio and Video in Industrial Systems</i>	
H.C. Lauer, C. Shen, R. Osborne, J. Howard, Q. Zheng, M. Takegaki, H. Shimakawa and I. Mizunuma	166
<i>Workstation Video Playback Performance with Competitive Process Load</i>	
K. Fall, J. Pasquale and S. McCanne	170
<i>When Can We Unplug the Radio and Telephone?</i>	
H. Schulzrinne	174
Session VI: Scheduling and Synchronization	176
<i>An Adaptive Stream Synchronization Protocol</i>	
K. Roethermel and T. Helbig	178
<i>A Method and Apparatus for Measuring Media Synchronization</i>	
B.K. Schmidt, J.D. Northcutt and M.S. Lam	190
<i>Integrated Processor Scheduling for Multimedia</i>	
J. Nieh and M.S. Lam	202

<i>Scheduling and Admission Testing for Jitter Constrained Periodic Threads</i>	
A. Mauthe and G. Coulson	206
<i>A CPU Scheduling Algorithm for Continuous Media Applications</i>	
R. Yavatkar and K. Lakshman	210
Session VII: Multicasting	214
<i>Dynamic Configuration of Conferencing Applications Using Pattern-Matching Multicast</i>	
H. Schulzrinne	216
<i>WAVE: A New Multicast Routing Algorithm for Static and Dynamic Multicast Groups</i>	
E. Biersack and J. Nonnenmacher	228
<i>Connection Establishment for Multi-Party Real-Time Communication</i>	
R. Bettati, D. Ferrari, A. Gupta, W. Heffner, W. Howe, M. Moran, Q. Nguyen and R. Yavatkar	240
<i>The Role of Multicast Communication in the Provision of Scalable and Interactive Video-on-Demand Service</i>	
K.C. Almeroth and M.H. Ammar	251
Session VIII: Network Scheduling and Real-Time Networking	255
<i>RED-VBR: A New Approach to Support Delay-Sensitive VBR Video in Packet-Switched Networks</i>	
H. Zhang and E.W. Knightly	258
<i>Determining End-to-End Delay Bounds in Heterogeneous Networks</i>	
P. Goyal, S.S. Lam and H.M. Vin	273
<i>Adaptive QoS-Based API for ATM Networking</i>	
V. Bansal, R.J. Siracusa, J.P. Hearn, G. Ramamurthy and D. Raychaudhuri	285
<i>Burst Scheduling Networks: Flow Specification and Performance Guarantees</i>	
S.S. Lam and G.G. Xie	289

Session IX: Storage Architectures	293
<i>A Novel Video-on-Demand Storage Architecture for Supporting Constant Frame Rate with Variable Bit Rate Retrieval</i>	
S.W. Lau and J.C.S. Lui	294
<i>The Design and Implementation of a RAID-3 Multimedia File Server</i>	
A.J. Chaney, I.D. Wilson and A. Hopper	306
<i>Efficient Data Layout, Scheduling and Playout Control in MARS</i>	
M.M. Buddhikot and G.M. Parulkar	318
<i>Storage Replication and Layout in Video-on-Demand Servers</i>	
S.D. Stoller and J.D. DeTreville	330
<i>Scalable MPEG2 Video Servers with Heterogeneous QoS on Parallel Disk Arrays</i>	
S. Paek, P. Bocheck and S.-F. Chang	342
<i>The Design of a Variable Bit Rate Continuous Media Server</i>	
G. Neufeld, D. Makaroff and N. Hutchinson	354