

Table of Contents

Part I Architecture

Using Split Queues to Improve the Performance of Parallel Switch	3
<i>Xiaofeng Hu, Zhigang Sun, Xicheng Lu, Jinshu Su</i>	
LEAP: A Data Driven Loop Engine on Array Processor	12
<i>Yong Dou, Xicheng Lu</i>	
A New Architecture of a Fast Floating-Point Multiplier	23
<i>Xu Zhou, Zhimin Tang</i>	
A Highly Efficient FC-SAN Based on Load Stream	31
<i>Jiwu Shu, Jun Yao, Changdong Fu, Weimin Zheng</i>	
A New High-Performance Distributed Shared I/O System	41
<i>Qiong Li, Guangming Liu, Yufeng Guo, Hengzhu Liu</i>	
IA64 Oriented OpenMP Compiler: Design and Implementation of Fortran Front End	50
<i>Hongshan Jiang, Suqin Zhang, Jinlan Tian</i>	
An Alternative Superscalar Architecture with Integer Execution Units Only	57
<i>Kenneth K.C. Lee, K.-E. Grosspietsch, Y.K. Chan</i>	
Paper withdrawn	66
A High Efficiency Distributed Mutual Exclusion Algorithm	75
<i>Dan Liu, Xinsong Liu, Zhijie Qiu, Gongjun Yan</i>	
The Security Architecture of the Java Operating System JX – A Security Architecture for Distributed Parallel Computing	85
<i>Christian Wawersich, Meik Felser, Michael Golm, Jürgen Kleinöder</i>	
Simultaneous Multithreading Trace Processors	96
<i>K.F. Wang, Zhenzhou Ji, Mingzeng Hu</i>	
A VLSI Architecture Design of 1-D DWT	104
<i>Zhiyang Cao, Zhenzhou Ji, Mingzeng Hu</i>	
Overcoming Static Register Pressure for Software Pipelining in the Itanium Architecture	109
<i>Haibo Lin, Wenlong Li, Zhizhong Tang</i>	

Separating Data Storage, Data Computation, and Resource Management One from Another in Operating Systems	114
<i>Fuyan Liu, Jinyuan You</i>	
A High Performance Design and Implementation of the Virtual Interface Architecture	125
<i>Yu Chen, Zhenqiang Jiao, Jun Xie, Zhihui Du, Peng Liu, Ziyu Zhu</i>	
A Portable Debugger for PVM / MPI Programs on IA64 Cluster.....	136
<i>Xi Qian, Jian Liu, Weimin Zheng</i>	
Optimization of Asynchronous Volume Replication Protocol	140
<i>Huanqing Dong, Zhanhuai Li</i>	
Predicate Analysis Based on Path Information	147
<i>Li Shen, Zhiying Wang, Jianzhuang Lu</i>	
kd-Clos: New No-Blocking Permutation Network	152
<i>Mei Ming, Dong Li, Bo Fu</i>	
LilyTask: A Task-Oriented Parallel Computation Model.....	157
<i>Tao Wang, Xiaoming Li</i>	
A Method of Data Assignment on Heterogeneous Disk System	162
<i>Jingli Zhou, Dong Xiang, Shengsheng Yu, Lin Zhong, Jian Gu</i>	
Apply Aggregate I/O to Improve Performance of Network Storage Based on IP	167
<i>Qiang Cao, Changsheng Xie</i>	
Orthogonal Design Method for Optimal Cache Configuration	172
<i>Hongsong Chen, Zhenzhou Ji, Mingzeng Hu</i>	
A Probabilistically Correct Election Protocol in Asynchronous Distributed Systems	177
<i>Sung-Hoon Park</i>	

Part II Software and Theory

A Formal Specification and Method for MAS as a Distributed System.....	189
<i>Yan Qi, Xin Wang, Wei Yan, Xinjun Mao, Zhichang Qi</i>	
Optimal Fixed Priority Assignment with Limited Priority Levels	194
<i>Xuelian Bin, Yuhai Yang, Shiyao Jin</i>	
A Proof Assistant for Mobile Processes	204
<i>Xutao Du, Zhoujun Li</i>	

Data Space Fusion Based Approach for Effective Alignment of Computation and Data	215
<i>Jun Xia, Xuejun Yang, Huadong Dai</i>	
Optimization Parameter Selection by Means of Limited Execution and Genetic Algorithms.....	226
<i>Yonggang Che, Zhenghua Wang, Xiaomei Li</i>	
Study on CORBA-Based Load Balance Algorithm	236
<i>Gongxuan Zhang, Jianfang Ge, Changan Jiang</i>	
Parallel Algorithm for Mining Maximal Frequent Patterns.....	241
<i>Hui Wang, Zhiting Xiao, Hongjun Zhang, Shengyi Jiang</i>	
Design of Cluster Safe File System	249
<i>Gang Zheng, Kai Ding, Zhenxing He</i>	
Graph Scaling: A Technique for Automating Program Construction and Deployment in ClusterGOP	254
<i>Fan Chan, Jiannong Cao, Yudong Sun</i>	
Pattern Classification with Parallel Processing of the Cellular Neural Networks-Based Dynamic Programming	265
<i>Hyongsuk Kim, Taewan Oh, Sangik Na, Changbae Yoon</i>	
An Effective Molecular Algorithm for Solving the Satisfiability Problem	274
<i>Wen Yu, Weimin Zheng</i>	
Scheduling Outages in Distributed Environments.....	281
<i>Anthony Butler, Hema Sharda, David Taniar</i>	
An Improved Parallel Algorithm for Certain Toeplitz Cyclic Tridiagonal Systems on Distributed-Memory Multicomputer	292
<i>Xuebo Zhang, Zhigang Luo, Xiaomei Li</i>	
Generic Programming for Scientific Computing in C++, Java TM , and C#	301
<i>Jens Gerlach, Joachim Kneis</i>	
A General Metric of Load Balancing in δ -Range	311
<i>Xuejun Yang, Huadong Dai, Yuhua Tang, Xiaodong Yi</i>	
Lattice Boltzmann Simulations of Fluid Flows	322
<i>Baochang Shi, Nangzhong He, Nengchao Wang, Zhaoli Guo, Weibin Guo</i>	

Part III Grid and Network

Design and Research of Strong-Mobile Agent Based Grid's Architecture	335
<i>Zhirou Zhang, Siwei Luo</i>	
A Cost-Based Online Scheduling Algorithm for Job Assignment on Computational Grids	343
<i>Chuliang Weng, Xinda Lu</i>	
Composition and Automation of Grid Services	352
<i>Zhihong Ren, Jiannong Cao, Alvin T.S. Chan, Jing Li</i>	
Algorithmic Skeletons for Metacomputing	363
<i>Martin Alt, Sergei Gorlatch</i>	
Grid Services Performance Tuning in OGSA	373
<i>Chuan He, Bin Du, Sanli Li</i>	
A Transaction Model for Grid Computing	382
<i>Feilong Tang, Minglu Li, Jian Cao</i>	
An Overview of Research on QoS Routing	387
<i>Yanxing Zheng, Wenhua Dou, Jing Tian, Mingyan Xiao</i>	
A Novel Model and Architecture on NMS – Dynamically Constructed Network Management	398
<i>Zhongzhi Luan, Depei Qian, Xingjun Zhang, Tao Liu, Heng Chen</i>	
QoS-Driven Multicast Tree Generation Using Genetic Algorithm	404
<i>Xingwei Wang, Hui Cheng, Jiannong Cao, Zhijun Wang, Min Huang</i>	
A Scalable Peer-to-Peer Network with Constant Degree	414
<i>Dongsheng Li, Xinxin Fang, Yijie Wang, Xicheng Lu, Kai Lu, Nong Xiao</i>	
Symmetric Distributed Server Architecture for Network Management System	425
<i>Xiaolin Lu</i>	
A Distributed Network Management Framework Based on NGI	430
<i>Jinxiang Zhang, Jilong Wang, Jianping Wu, Xing Li</i>	
Performance Evaluation of Scheme Integrating Mobile IP and NHRP over ATM Networks	435
<i>Tae-Young Byun, Min-Su Kim, Ki-Jun Han</i>	

Improving Availability of P2P Storage Systems	446
<i>Shuming Shi, Guangwen Yang, Jin Yu, Yongwei Wu, Dingxing Wang</i>	
Research and Implementation of Dynamic Web Services Composition	457
<i>Haiyan Sun, Xiaodong Wang, Bin Zhou, Peng Zou</i>	
Call Admission Control for Multimedia CDMA Networks under Imperfect Power Control	467
<i>Xiaoming Bo, Zujue Chen</i>	
Efficient Data Consistency Schemes in 2-Tier Cellular Networks	478
<i>Seunghum Lim, Jai-Hoon Kim, Young-Bae Ko</i>	
iHOPE: An Intelligent Handoff Protocol for Seamless Multimedia Service in Wireless Network	483
<i>Jang-Woon Baek, Dae-Wha Seo</i>	
Content and Cell Based Predictive Routing (CCPR) Protocol for Mobile Ad Hoc Networks	488
<i>Jörg Kaiser, Changling Liu</i>	
A Multiple Access Scheme Using Split and Merge Algorithm for Contention/Reservation-Based Wireless MAC Protocols	496
<i>Min-Su Kim, Tae-Young Byun, Ki-Jun Han</i>	

Part IV Applied Technologies

Reconfigurable Cipher Processing Framework and Implementation	509
<i>Jingfei Jiang, Xiaoqiang Ni, Minxuan Zhang</i>	
A Dynamic Reconfiguration Platform Based on Distributed Component Technology CCM	520
<i>Lei Dou, Quanyuan Wu, Yan Jia, Weihong Han</i>	
TMO-Based Object Group Framework for Supporting Distributed Object Management and Real-Time Services	525
<i>Chang-Sun Shin, Myoung-Suk Kang, Chang-Won Jeong, Su-Chong Joo</i>	
Extendable and Interchangeable Architecture Description of Distributed Systems Using UML and XML	536
<i>Changai Sun, Jiannong Cao, Maozhong Jin, Chao Liu, Michael R. Lyu</i>	
Dynamics in Hierarchical CSCW Systems	546
<i>Xiaodong Wang, Haiyan Sun, Ming Xu, Xingming Zhou</i>	
The Tenure Duty Method (TDM) in the Active Incident Recovery Research	557
<i>Zunguo Huang</i>	

A Combined Continuous-Time/Discrete-Event Computation Model for Heterogeneous Simulation Systems	565
<i>Andreas Franck, Volker Zerbe</i>	
Information Geometry on Modular and Hierarchical Neural Network	577
<i>Yunhui Liu, Siwei Luo, Aijun Li, Hua Huang, Jinwei Wen</i>	
A Novel Speed-Up Algorithm of Fractal Image Compression	582
<i>Yusong Tan, Xingming Zhou</i>	
Implementation and Evaluation of a Novel Parallel SAR Imaging Method on Clustering Systems.....	590
<i>Jizhong Han, Shichao Ma</i>	
Shape Registration Based on Modified Chain Codes	600
<i>Muhammad Bilal Ahmad, Jong-An Park, Min Hyuk Chang, Young-Suk Shim, Tae-Sun Choi</i>	
A Distributed Parallel Resampling Algorithm for Large Images	608
<i>Yanhuang Jiang, Xuejun Yang, Huadong Dai, Huizhan Yi</i>	
Collaborative Supervision of Machine Vision Systems: Breaking a Sequential Bottleneck in the Supervised Learning Process	619
<i>Steve Drew, Sven Venema, Phil Sheridan, Chengzheng Sun</i>	
Parallel Storing and Querying XML Documents Using Relational DBMS	629
<i>Jie Qin, Shuqiang Yang, Wenhua Dou</i>	
A Variable Consistent Server Replication Model for Mobile Database	634
<i>Jinhui Xu, Ming Xu</i>	
Multi-scheduler Concurrency Control for Parallel Database Systems	643
<i>Sushant Goel, Hema Sharda, David Taniar</i>	
Optimal Broadcast Channel for Data Dissemination in Mobile Database Environment	655
<i>Agustinus Borgy Waluyo, Bala Srinivasan, David Taniar</i>	
Global System Image Architecture for Cluster Computing	665
<i>Hai Jin, Li Guo, Zongfen Han</i>	
Author Index	677

Advanced Parallel Processing Technologies
5th International Workshop, APPT 2003, Xiamen, China,
September 17-19, 2003, Proceedings
Zhou, X.; Jähnichen, S.; Xu, M.; Cao, J. (Eds.)
2003, XIV, 678 p., Softcover
ISBN: 978-3-540-20054-3