

**2004 International Symposium on
Distributed Computing and Applications to
Business, Engineering and Science**

DCABES 2004

PROCEEDINGS

Volume II

Editor in Chief Guo Qingping



Hubei Science and Technology Press, Wuhan, China

**2004 International Symposium on
Distributed Computing and Applications to
Business, Engineering and Science**

DCABES 2004

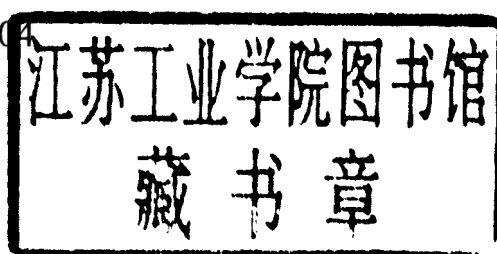
PROCEEDINGS

Volume II

Editor in Chief Guo Qingping

Wuhan, China

September 13-16, 2004



Hubei Science and Technology Press, Wuhan, China

图书在版编目(CIP)数据

2004 年电子商务、工程及科学领域的分布式计算和应用国际学术研讨会论文集 / 郭庆平主编. — 武汉: 湖北科学技术出版社, 2004. 9

ISBN 7-5352-3269-8

I. 2… II. 郭… III. 分布式计算机—计算机应用—国际学术会议—文集 IV. TP338. 8-53

中国版本图书馆 CIP 数据核字(2004)第 093693 号

Copyright © 2004 by Hubei Science and Technology Press, Wuhan, China
All Rights Reserved

Copyright and Reprint Permissions: Abstracting is permitted with credit to the source. Libraries are permitted to photocopy for private use. Instructors are permitted to photocopy for private use isolated articles for non-commercial classroom use without fee. Other copying, reprint, or republication requests should be addressed to: Hubei Science and Technology Press, the 13th Floor of Block B, 268 Xiongchu Avenue, Wuhan, 430070, P. R. China

The papers in this book comprise the proceedings of the meeting mentioned on the cover and title page. They reflect the authors' opinions and, in the interests of timely dissemination, are published as presented and without change. Their inclusion in this publication does not necessarily constitute endorsement by the editors, the Wuhan University of Technology, the Hubei Science and Technology Press, the Natural Science Foundation of China, the Ministry of Education, China, or other sponsors and organizers.

Organized by

WUT Wuhan University of Technology

Co-organized by

ISTCA International Science and Technology
Cooperation Association of Hubei Province

CAA Computer Academic Association of
Hubei Province & Wuhan Metropolis

Sponsored by

WUT Wuhan University of Technology

MOE Ministry of Education, China

NSFC National Nature Science Foundation of
China

SUN Microsystems (Hong Kong Headquarter)



DCABES 2004 PROCEEDINGS

© Editor in Chief Guo Qingping

Editorial Production by Wu Ruilin, Li Zhiming

Cover Art Production by Da Min Wan Xiaofen

Published by **Hubei Science and Technology Press, Wuhan, China**

Tel: +86-(0)27-87679468

Address: The 13th Floor of Block B, 268 Xiongchu Avenue, Wuhan, Post Code: 430070 P. R. China

Printed in Wuhan, China by Youngster Union Printery

Post Code: 430063

880mm×1230mm sixteenmo 71.5 sheets

1 500 k Characters

First Edition September 2004

First Impression September 2004

ISBN 7-5352-3269-8/ TP·79

Price RMB 150

QoS of Book Printing and Bounding is guaranteed by the printery.

PREFACE

High-performance computing is increasingly being used in all aspects of modern society. It is well known that the distributed parallel computing plays a main role in the HPC. In recent years, more and more attentions have been put on to the distributed parallel computing. I am confident that the distributed parallel computing will play an even greater role in the near future. Since distributed computing resources, once properly cooperated together, will achieve a great computing power and get a high ratio of performance/price in parallel computing. In fact the grid computing is a direct descendent of the distributed computing.

It is the second time for the DCABES international conference to be held in Wuhan China. We are gratified that this time nearly 400 papers submitted which cover a wide range of topics, such as Grid Computing, Mobile Computing, Parallel/Distributed Algorithms, Image Processing and Multimedia Applications, Parallel/Distributed Computational Methods in Engineering, System Architectures, Networking and Protocols, Web-Based Computing & E-Business, E-Education, Network Security and various types of applications etc.

All papers contained in this Proceedings are peer-reviewed and carefully chosen by members of Scientific Committee and external reviewers. Papers accepted or rejected are based on majority opinions of the referee's. All papers contained in this Proceedings give us a glimpse of what future technology and applications are being researched in the distributed parallel computing area in the world.

I would like to thank all members of the Scientific Committee, the local organizer committee, the external reviewers for selecting papers. Special thanks are due to Dr. Choi-Hong LAI, who co-chaired the Scientific Committee with me. It is indeed a pleasure to work with him and obtain his suggestions. Also sincere thanks should be forward to Tsui, Mr Y M Thomas, Chinese University of Hong Kong, for his enthusiastically taking part in and supporting the DCABES conference.

I am also grateful to Prof Peter Jimack, University of Leeds, UK; Prof Peter Kacsuk, LPDS, MTA SZTAKI, Hungary; Prof Simon Cox, University of Southampton, UK and Dr Simon See, Global Science and Technology Center, Sun Microsystems Inc, Singapore, for their contributions of keynote speeches in the conference.

Sincerely thanks should be forwarded to the Natural Science Foundation of China (NSFC), the China Ministry of Education (MOE), without their supports the DCABES 2004 could not be held in Wuhan China successfully. We would also like to thank the WUT (Wuhan University of Technology, China), the National Parallel Computing Society of China (NPCS), the ISTCA (International Science and Technology Cooperation of Hubei Province, China), and the CAA (Computer Academic Association of Hubei Province & Wuhan Metropolis, China) for their supports as local organizers of the conference. It should also be mentioned that the SUN Microsystem (Hong Kong Headquarter) made a contribution to the conference.

Finally I should also thank A/Professor Jian Guo for his efforts in conference organizing activities. The special thanks also should be given to my graduate students, Mr. Zhou Cheng for the conference website design, Mr. Zhou Cheng and Yang Hao for their efforts in organizing activities. It also should be mentioned that my graduate students, Mr. Ouyang Lin, Tang Guosheng, Yang Hao, Zhang Feng, Chen Jun, Shen Dingcai, Li Xiaoxin, Mao Liming, Zhang Feng and Ms Rao Jing of the grade 2002; Mr. Zhou Cheng, Wu Yanmao, Wang Qingsong, Liu Feng, Sun Hao, Cheng Haifeng, Han Guangming, Jiang Weijian Wu Weiwei of the grade 2003, and graduate student Guo Yucheng spent a lot of time and efforts typesetting the proceedings. Without their help the proceedings could not looks so good.

Enjoy your stay in Wuhan. Hope to meet you again at the DCABES 2005.



Guo, Professor Qingping
Chair of the DCABES2004
Dept. of Computer Science
Wuhan University of Technology
Wuhan, China

Honorary Chair

Zhou, Professor Zude, President of the WUT, China

Chair of Scientific Committee

Guo, Professor Q. P., Wuhan University of Technology

Co-Chair of Scientific Committee

Lai, Dr. Choi-Hong, University of Greenwich

Chair of Organizer Committee

Guo, Professor Q. P., Wuhan University of Technology

Scientific Committee (in alphabetical order)

Cai, Professor X.-C.	University of Colorado, Boulder, U.S.A.
Cao, Professor J.W.	Research and Development Centre for Parallel Algorithms and Software, Beijing, China
Chi, Professor X.B.	Academia Sinica, Beijing, China
Guo, Professor Q.P.	Wuhan University of Technology, Wuhan, China
Ho, Dr. P. T.	University of Hong Kong, Hong Kong, China
Kang, Professor L.S.	Wuhan University, Wuhan, China
Keyes, Professor D.E.	Columbia University, New York, USA
Lai, Dr. C.-H.	University of Greenwich, London, UK
Lee, Dr. John.	Hong Kong Polytechnic, Hong Kong, China
Liddell, Professor H. M.	Queen Mary College, University of London, London, UK
Lin, Dr. H.X.	Delft University of Technology, Delft, the Netherlands
Lin, Dr. P.	National University of Singapore, Singapore
Loo, Dr. Alfred	Hong Kong Lingnan University, Hong Kong, China
Ng, Dr. Michael	University of Hong Kong, Hong Kong, China
Sun, Professor J.	Academia Sinica, Beijing, China
Tsui, Thomas	Chinese University of Hong Kong, Hong Kong, China
Xu, Professor W.	Southern Yangtze University, Wuxi, China

Local Organizing Committee

Zhou, Professor Z.D. (Honorary Chair)	President of Wuhan University of Technology, Wuhan, China
Guo, Professor Q.P. (Chair)	Wuhan University of Technology, Wuhan, China
Zhong, Professor L. (Co-Chair)	Wuhan University of Technology, Wuhan, China
Liu, Professor Z.Y.	Wuhan University of Technology, Wuhan, China

Chen, Professor J.S.	Wuhan University of Technology, Wuhan, China
Kang, Professor L.S.	Wuhan University, Wuhan, China
Jin, Professor Hai	Hua Zhong University of Science and Technology, Wuhan, China
Liu, Professor Q.	Wuhan University of Technology, Wuhan, China
Lu, Professor J.G.	South Central China Nationality University, Wuhan, China
Tan, Professor L.S.	Central China Normal University, Wuhan, China
Xu, Prof. H.Z.	Wuhan University of Technology, Wuhan, China
Zeng, Professor C.N.	Wuhan University of Technology, Wuhan, China

REFEREES

Douglas, Professor Craig, Yale University, USA
 Guo, Professor Q. P., Wuhan University of Technology, Wuhan, China
 Ho, Dr. P. T., University of Hong Kong, Hong Kong, China
 Jesshope Professor Chris R., Hull University, Hull, UK; Director of NZEdSoft, New Zealand
 Kwan, Mr. W. K., University of Hong Kong, Hong Kong, China
 Lai, Dr. Choi-Hong, University of Greenwich, London, UK
 Lee, Dr. John, Hong Kong Polytechnic University, Hong Kong, China
 Liddell, Professor Heather, Queen Mary and Westfield College, University of London, London, UK
 Lin, Dr. Ping, National University of Singapore, Singapore
 Loo, Dr. Alfred, Lingnan University, Hong Kong, China
 Lu, Professor Zhengding, Huazhong University of Science and Technology, Wuhan, China
 Ng, Dr. Michael, University of Hong Kong, Hong Kong, China
 Paker, Professor Yakup, Computer Science Department, QMW, University of London, London, UK
 Tan, Professor L.S., Central China Normal University, Wuhan, China
 Jin, Professor Hai, Hua Zhong University of Science and Technology, Wuhan, China
 Xu, Professor W, Southern Yangtze University, Wuxi, China
 Ng, Dr. Michael, University of Hong Kong, Hong Kong, China
 Cai, Professor X.-C., University of Colorado, Boulder, U.S.A
 Cao, Professor J.W., Research and Development Centre for Parallel Algorithms and Software, Beijing, China
 Keyes, Professor D.E., Columbia University, New York, USA
 Lin, Dr. H.X., Delft University of Technology, Delft, Netherlands
 Dr. Rüdiger Reischuk, Universität Lübeck, Germany
 Prof. Dr. Joerg Rothe, Institut fuer Informatik, Universitaet Duesseldorf
 A/Prof. Dr. Nayyer Masood, COMSATS Institute of Information Technology, Wah Cantt, Pakistan
 Dr. Mike Brayshaw, QMW, University of London, London, UK
 Dr. Ajay K Katangur, Department of Computer Science, Georgia State University, Atlanta, USA
 Dr Bing Wang, Computer Science Department, University of Hull, Hull, UK
 Associate Prof. Yuh-Shyan Chen, National Chung Cheng University Taiwan, China
 Miss Srilaxmi Malladi, Georgia State University, Atlanta, USA
 Prof. Yi Pan, Georgia State University, Atlanta, USA
 Dr. HE, Lifeng, Faculty of Information and Computer Science, Aichi Prefectural University, Aichi, Japan
 Heng Pheng Ann, Professor, the Chinese University of Hong Kong, Hong Kong, China
 Dr. Shiduan Cheng, BUPT, Beijing, China
 Dr Tang Ming Xi, School of Design, the Hong Kong Polytechnic University, Hong Kong, China
 Dr. Christian Sohler, Computer Science Dept., UPB, Germany
 Mr. Praveen Madiraju, Georgia State University, Atlanta, USA
 Professor Madhusudhan Govindaraju, Binghamton, UK

Dr. Ze Dang, zdang@eecs.wsu.edu,
Prof. Henry Wolkowicz, Dept of Comb and Opt, University of Waterloo, Waterloo, Ont. CANADA
Dr. Wong Tien Tsin, Chinese University of Hong Kong, Hong Kong, China

CONTENTS

Preface	xvi
Committees	xvii
Referees	xviii

Volume I

1. Grid Computing	1
P-GRADE: a High-level Grid Application Development Environment Peter Kacsuk.....	1
High Performance and Grid Computing Where Are We Going? Simon See.....	7
A Taxonomy and Survey of Grid Resource Planning and Reservation Systems for Grid Enabled Analysis Environment Arshad Ali Ashiq Anjum, Atif Mehmood, et al.....	13
A Comparative Survey of Fault-tolerant and Load-balanced MPI Implementations, Software Packages and Algorithms Raihan Ur Rasool, Guo Qingping.....	17
Reusing Legacy Applications for Grid Computing Yu Huashan, Xu Zhuoqun, Ding Wenkui.....	23
Researches of Key Technologies for Data Grid Fansong Meng, Zude Zhou, Quan Liu.....	29
Global Grid Queue Services Architecture and Point-based Simulated Annealing Algorithm for Resource Scheduling Shengjun Li, Ruimin Shen, Robert Lackman.....	34
The Application of Grid in Grid Services Zhao Jianmin, Zhu Xinzong.....	37
A Software Bus Based on the Grid Computing Cheng Yuanbin.....	40
Developing Grid Computing Applications Based on OGSA Jing Tong, Haochun Liu.....	43
Research on the Architecture-based Adaptive Grid Application Guoyou Zhang, Yinzhang Guo.....	48
Grid Computing Resource Management Scheduler Based on Genetic Algorithm Hao Tian, Zhou Zude, Liu Quan.....	51
The Scheme of Synthetic Forces Express Based on Vega Grid Cheng Zhou, Qingping Guo.....	55
Implementing Distributed Simulations in Grid Computing Environments Tingxin Song, Cheng Wang, Jianmin Xiong, et al.....	59

HACP: An Ant-Based Partitioner for Grid Computing Applications Lin Jin, Wang Meiqing, Jiang Xiufeng.....	63
A Service-oriented Grid Computing Model Based on Jini Tang Guosheng, Guo Qingping, Yang Jian.....	68
A Layered Distribute Resource Discovery Model in Grid Computing System Wang Xiaogen, Xu Wenbo.....	72
Economic Mechanism Driven Resource Management in Computational Grid Li Chunlin, Lu Zhengding, Li Layuan.....	75
A Taxonomy of Data Location Themes for Storage Cluster and Storage Grid Yong Feng, Yanyuan Zhang.....	80
Research on the Data Grid Griddaen Architecture Based on Grid Middleware Quan Long, Quan Liu.....	86
The Application of Simulation in Large Scale Traffic Flows System Based on Grid Computing Yun Wu.....	90
2. System Architectures, Networking and Protocols.....	94
A Distributed Peer-to-Peer Platform for Synchronized Group Collaboration and Knowledge Sharing Jo-Yew Tham; Seng-Luan Lee; Choon-Ee Tan, Roger; et al.....	94
The Splitting Methods in High-speed Networks Data Analysis Chen Xunxun, Fang Binxing, Li Lei.....	100
Design and Implementation of Policy-based Network Management Based on SNMPv3 Xi Yue, Debao Xiao.....	104
Implementations of CGI in Embedded Web Server Xihuang Zhang, Wenbo Xu.....	107
Modeling Distributed Systems: Architecture and Process Beihong Jin, Jianchao Wang.....	110
Opening Component Integration Architecture Zhou Xiaofeng, Wang Zhijian, Fei Yukui.....	116
Packet Transfer Delay of the RPR Rings in Comparison between the Store-and-Forward and Cut-Through Architecture Yi Yang, Mingcui Cao, Ping Huang.....	120
A Kind of Generic Real-time Dependable Server Architecture with Low Fault-latency Using COTS Components Ou Zhonghong, Dai Xingfa, Yuan Youguang, et al.....	124
Hardened VPN Based on IXP425 Yue Hu, Fangmin Li, Quan Liu.....	128
A New Distributed CFAR Processor Yang Jun, Ma Xiaoyan, Xiang Jiabin.....	131
A Scalable Approach for IP-Multicast in Differentiated Services Networks Wang Xiaoyan, Zheng Mingchun.....	135
A Virtual Server Scheme Based on LVS and XRN Guo Yucheng, Guo Qingping.....	140

An Improved BP Algorithm Based on a Variant Sigmoid Function with Three Parameters Hu Yaogai, Yan Xin, Zhang Xiaoxing, et al.....	144
Implementing Synchronous Multicasting in Switch-Based Cluster Systems Feng Ping, Lei Yanjing, Liu Junrui.....	149
A Study of Personalized Network Based on Multi-Layer Packet Classification and ACL Cheng Chuanhui, Li Layuan, Xiang Yang.....	154
A Hierarchical System Management Approach Based on SNMP for Network Device Yan Bin, Yang Zijie.....	157
VLAN Aggregation Technology Research and Implementation Cheng Chuanqing.....	161
Study and Application on Time Synchronization Technique in Computer Network He Peng, Xu Yishan, Tao Ke, et al.....	165
A Distributed Computing Platform ----BOINC Fan Yang, Xinzhong Zhu, Jianmin Zhao.....	170
The Application of ACE in Distributed Network Management System Chen Jun, Guo Qingping.....	174
A Link Layer Automatic Topology Discovery Algorithm Liu Yuhua, Yu Shengsheng, Li Yanhong.....	178
The Evaluation of the Probabilistic Packet Marking for Path Bifurcation Fu Jianming, Zhu Qin, Zhang Huanguo.....	182
A Multicast Routing Optimization Algorithm with Bandwidth and Delay Constraints Based on GA Sun Baolin, Li Layuan, Ma Jun.....	186
A Kind of Low Latency Communication Way over Ethernet Dai Xinfu, Ou Zhonghong, Fang Ming, et al.....	192
A QoS Multicast Routing Algorithm Working with Imprecise State Information Yan Xin, Li Layuan, Zhang Xiaoxing.....	196
Data Transmission Rate Control in Computer Networks Using Neural Predictive Networks Liansheng Tan, Naixue Xiong, Yan Yang.....	202
Research on the Basis of QoS Routing Protocol of Ad Hoc Network Chen Niansheng, Li Layuan.....	206
An Improved Multicast Routing Algorithm with Delay-constrained Based on Genetic Algorithm Wei Fang, Wenbo Xu.....	211
The Distributed Interactive Multimedia Synchronization Model Based on the Temporal Petri net Lu Feng, Guo Yingli.....	216
An Improved Genetic Algorithm for Solving QoS Distributed Routing Problem Youwei Yuan, C.Cujaj.....	221
Design and Implementation of an Embedded VPN Gateway Based on IPSec Zheng Yuanjiu, Liu Quan, Li Fangmin.....	225
Shortest-Path Routing Based on Ant-Algorithm Min LianYing, Yang JinYong.....	228
Data Communication between Monitor computer and PLC Based on the Profibus Liu Qing, Guo Jianming, Wang Yanwen.....	231

A Secure QoS Multicast Routing Protocol Yang Mingxi, Li Layuan.....	235
Research of Indirect Replication Algorithm in Distributed Storage System Wang Yijie, Li Sikun.....	241
Design and Performance Analysis of High Availability iSCSI Storage Area Network Jiang Minghua, Zhou Jingli.....	243
A High Performance Dynamic Memory Management Scheme Huifu Zhang, Fangmin Li.....	247
The Performative Design of Distributed Storage Agents Zhu Yong, Zhang Jiangling.....	251
A New Solution Scheme of NAT and IPSec Protocol Compatibility Problem Based on IP Tunnel Li Fangmin, Xue Ligong, Wang Runyun, et al.....	255
3. Mobile Computing.....	258
Some Strategies in the Distributed and Mobile GPS System Min Peng, Yanxiang He, Wensheng Hu	258
Efficient and Adaptive Load Balancing Based on Mobile Agent Yang Yongjian, Chen Yajun, Cao Xiaodong, et al.....	263
A Mobile Agent Based Middleware for Grid Computing Peng Dewei, He Yanxiang.....	268
Research on Prediction Model of Dynamic Load-Balancing with Mobile Agent in a Parallel Distributed System Yang Yongjian, Cao Xiaodong, Chen Yajun.....	274
Comparison of Missing Data Estimation Methods in Satellite Information for Scientific Exploration ZHao GuangHui, Song HuaZHu, Xia HongXia, et al.....	278
QoS-based Multicast Routing Optimization Algorithms for Wireless Networks Chen Hua, Sun Baolin.....	281
A Core-Stateless Dynamic Bandwidth Allocation Mechanism Based on Resource Reservation Liu Quan, Liang Xiaoyu, Li Fangmin.....	286
Customer Relation Management System Based on Mobile Internet Di Guoqiang.....	290
4. Parallel / Distributed Algorithms.....	293
A Dynamic Data-Driven Application Simulation Framework Craig C. Douglas, Yalchin Efendiev.....	293
A Hybrid Method for the Update of Sub-domain Interfaces Qingping Guo, C.-H. Lai.....	298
On a Distributed Algorithm for the Solution of Nonlinear Transient Parabolic Problems C.-H. Lai, A. J. Davies.....	301
Parallel and Multilevel Algorithms for Computational Partial Differential Equations Peter K Jimack.....	305

A Parallel Asynchronous Hybrid Method to Accelerate Convergence of a Linear System	
Haiwu He, Guy Bergere, Serge Petiton.....	311
Design and Verification of Parallel Programs	
Wang Jian, Chi Xuebin.....	317
Protein Evolution Based on Complex Networks	
Wang zhongjun, Wang nengchao.....	320
Algorithm of Decomposition and Reconstruction with Orthogonal Multiwavelet Packets	
with Random Scale	
Leng Jinsong, Huang Tingzhu.....	323
Distributed Cluster-based Solution Techniques for Dense Linear Equations	
Gu Zhimin, Marta Kwiatkowska.....	326
Apply Neural Computation to Ground Waves Caused by High-Speed Trains	
Zou Chengming, Yang Hongyun , Tong Qiwei, et al.....	331
A New Distributed Computing Model: Isolated Island	
Xinchao Zhao.....	334
Algorithm for Solving the Symmetric Five-Diagonal Toeplitz Linear Equations	
Ran Ruisheng, Huang Tingzhu.....	339
The Fuzzy Inference Based on Genetic Algorithm	
Zhang Jianhua, Jiang Qian.....	342
Parallel Multi-grid Algorithm Based on Cluster Computing with Application to Transient Heat Transfer	
Zongbo Zhu, Guoxun Yang, Chunxiao Liu, et al.....	345
An Error Bound for the SAOR Method	
Liu Futi, Huang Tingzhu, He huiming.....	350
Analysis of Parallel Matrix Multiplication Algorithms	
Wanlong Liu, Yaolin Gu.....	354
Multi-stage Influence Diagrams Decision Using Genetic Algorithms	
Zhao Yun, Liu Weiyi, Li Jin.....	358
Genetic Searching for Optimized Closure State of CFST Arch Bridge Construction	
Fan Jianfeng, Zhong Luo, Tong Qiwei.....	362
A Wavelength Assignment Algorithm of Parallel LU Decomposition Communication Pattern	
on WDM Ring Interconnection Network	
Yawen Chen, Fangai Liu.....	366
Genetic Algorithms for Solving Graphical Games	
Jin Li, Weiyi Liu, Yun Zhao.....	372
Some Issues on Adaptive Genetic Algorithm	
Zhang Jianjian, Wang Pan.....	377
A Class of Accelerated Convergence Algorithms for Solving Ordinary Differential Systems	
Dongjin Yuan.....	381
Genetic Algorithm and Evolutionary Programming: A comparison study	
Wei Gao.....	385
A High-efficient Parallel Reasoning Algorithm	
Minghe Huang, Cuixiang Zhong.....	390

A Fast and Efficient Parallel Sorting Algorithm on LARPBS Chen Hongjian, Chen Yixin, Chen Ling, et al.....	393
Fast Parallel Identification of Multi-peaks in Function Optimization Guo Guanqi, Tan Zhumei.....	398
5. Computational Methods	
Constraint-based Concurrency in Java Rafael Ramirez, Juanjo Martinez, Andrew E. Santosa.....	402
Component Based Simulation Environments of Distributed Discrete Event Simulation Zhang Yaohong , Luo Xueshan, Luo Aiming, et al.....	407
An Approach of Component Tailoring Based-on Parameterized Contracts Fei Yuikui, Wang Zhijian.....	411
On a Smart Software for Cement-Meal Batching Computation Jiang Hongzhou, Li Juanjuan.....	415
6. Distributed Operating System.....	
A New Simulation Method Using Multithreading for Modeling Parallel Operated Systems Wingcheong Kwong.....	418
The Design and Implementation of a Multi-Auctioneer Prototype System for Grid Resource Management Xiuchuan Wu, Hao Li, Jiubin Ju.....	424
Research on Resilient Distributed File Systems Li Zhonghua, Li Weihua, Zhang Lin.....	430
Efficient Scheduling of Task Graphs to Multiprocessors Using a Simulated Annealing Algorithm Wenbo Xu, Jun Sun.....	435
Priority Assignment Strategy of Multiple Priority Queues Zhang Jianhua, Cong Yue.....	440
Design and Implement to Load Balancing to the Application Server Cluster Tang Wei.....	443
Finish Time Maximization Method: an Anti-Sequence Algorithm to Scheduling Task Graphs for Multiprocessors Jun Sun, Wenbo Xu, Bin Feng.....	447
Implementing and Invoking a Remote Object Calling Native Methods via RMI-IIOP and JNI Minglong Qi, Qingping Guo, Luo Zhong.....	451
A Technology to Improve Embedded-Linux Real-time Performance He Keyou, Hung Minfeng.....	457
7. Web-based Computing.....	
Exploring the Initial Structures of Dynamic Markov Modeling for Chinese Text Compression Ghim Hwee Ong, Junping Ng.....	460
Research on Integration of Web Services and Workflow Modeling Technique Shen Yuan , Chen Wenbo , Yao Zhiqiang	464

A Trust Management Framework Suitable for Web Services Security Ai Ping, Mao Yingchi.....	469
Research of Intelligent Search Engine Technology Facing Electronic Commerce Tong XiaoJun, Wang Zhu.....	474
Metadata Catalog Service for Geographic Information Resource Xu Kun, Liao Husheng, Du Jinlian.....	478
Research of Comparing CORBA with DCOM Wang Jingyang, Wang Xiaohong, Yuan Dun, et al.....	481
The Summarize of JAVA Platform for Web-based Computing Huiying Xu, Xinzhong Zhu.....	484
Semantic Web Enabled the Context Information in Ubiquitous Computing System Chen Xuhui, Tang Shancheng, Wang Yimin	488
A Web-based Engineering Optimization System and Its Application Caijun Xue, Hong Nie, Yanqin Dai.....	493
Research on the Model of Intelligent Meta-search Engine Li Liu, Wenbo Xu.....	497
A Study of CORBA Multi Port ORB Architecture Based on Hierarchy Domain Guo Yinzhang, Xie Liping, Xu Yubin, et al.....	501
A Multi-purpose Web Information Publishing Framework Yiqing Kong, Bin Feng, Wenbo Xu, et al.....	505
A Mediation-based Approach for Distributed Digital Library Services Yu Jianghong, Fang Wei.....	508
Web-Based Learning and Fault Diagnostic System Feng Pan, Wenbo Xu.....	511
A Design and Implementation of Dynamic E-business System Based on WEB Services Shaozhen Ye, Huajun Han.....	516
Research and Design for the Wrapper of Web-Based Data Resource Assembling Based on Soap ZhiHua Li, Jun Sun.....	521
An Approach towards Automated Web Services Composition Muhammad Adeel Talib, Yang Zongkai.....	524
Link-based Markov Model Prefetching Algorithm on Web Cache Wang Zhao, Guo Chengcheng, Yan Puliu.....	530
Analysis and Comparison between Two Distributed Object Technologies CORBA and DCOM He Keyou, Zhang Weilin.....	535

Volume II

8. Distributed Database.....	538
Deadlock Detection and Resolution in a Dike Safety Detection Management Information System Wu Jie, Liu Xiangsheng, Wu Wei.....	538
Mining Fuzzy Associate Rules for Anomaly Detection XiongPing, ZhuTianqing, HuangTianshu.....	541
A Pocket Spatial Database Prototype and its Query Language Guobao Yu, Husheng Liao, Yuming Zheng.....	545
Research and Implementation of Distributed Data Dissemination Jing Feng, Kong Yi, Chunhui Fan, et al.....	549
A Multi-granularity Locking Protocol Based on Ordered Sharing Locks in Engineering Databases that Supports Cooperative Design Chen Guoning, Li Taoshen, Liao Guoqiong.....	552
A Multi-dimension Perspective to XML Databases Modeling Liu Hongxing, Lu Yansheng.....	559
Construction and Maintenance of the Knowledge Base Used in GSIES-TOOL Xu Yong, Zhong Luo, Yang Ke.....	563
Create Distributed Application with Java RMI to Manipulate BLOBs Wang Jingyang, Wang Jianxia, Zhang Xiaoming, et al.....	567
Cooperation Agent Applications for MKA Based on Grid Computing Xia Huosong.....	570
Accessing BLOB Data Stored in Database Based on ADO in Visual C++ Qin Min, Wang Jingyang, Zhang Xiaoming, et al.....	574
Research on How to Connect Database in FORTRAN Xia Hongxia, Jin Peng, Yuan JinLing.....	578
Methods of Applet Querying Database through Servlet Qin Min, Wang Jingyang, Wang Jianxia, et al.....	581
The Research of an Inventory Control Information System Based on the Internet Xiao Hanbin, Mo Lili, Zeng Xiangfeng.....	584
The Warehouse Management System Based on the Distributed Database Xiong Guohai, Wan Junli.....	588
The Design and Realization about the Campus Information Management System Based on the Data Warehouse Wang jianxia, Zhou wanzhen, Qin min, et al.....	591
Application of Distributed Database of Electric Power Management Information System Wu Wei, Wu Jie, Hu Peng.....	595
The Feature Parameter Extraction in Palm Shape Recognition System Wang Jianxia, Qin Min, Zhou Wanzhen, et al.....	598

9. E-Business.....	601
Commercial Bank Credit Risk Real-Time Value-at-Risk Computing System Rong Lan, Shouqi Zheng.....	601
Contract-based Interlayer: a Two-way Approach to Integrate Call Center with J2EE Framework Wu Cen, Lin Zuoquan, Zhao Xinyu, et al.....	605
Design and Implementation of a General Secure Extensible Payment Gateway Architecture Bo Meng, Qianxing Xiong, Huanguo Zhang.....	610
The Study on Exchange Platform of Network Manufacturing Products Based on Digital Watermarking Techniques and Fair Exchange Protocol Zude Zhou, Zhiyang Wang, Quan Liu	614
Data Mining System Based on Web Services for E-commerce: Architectonics and Algorithm Luo Zhong, Qiwei Tong, Bin Fan, et al.....	619
Building Robust J2EE Web Applications with Integration of Struts and JavaServer Faces Yang Hao, Guo Qingping.....	623
An XML Web Service Application Architecture Based on Microsoft BizTalk Server Zhou Ying, Liu Quan.....	627
A Model of the 3D Virtual Shopping that Has the Intelligent and Cooperative Purchasing Functionalities Zhao Yiming.....	630
A Server Electronic Wallet Architecture Supported Multi-payment Protocols and Instruments Bo Meng, Zhang Huanguo, Xiong Qianxing.....	634
ebXML: the Global Standard for Electronic Business Chen Caixian, Ran Chunyu.....	639
The Design and Implementation of Distributed Database in Trust Investment Synthesized Business System Kaiying Yang, Fahong Yu.....	643
10. E-Education.....	647
The Realization of CAI on Campus Net Wang Jing.....	647
Study on Focus in a SIP-based E-learning System Zeng Qingheng, Hu Ruimin	649
Java Based Distributed Learning Platform Zhang Xiaoming, Zhu Jinjun, Wang Jingyang, et al.....	654
A Distributed Remote Education System Based on CSCW Rui Hao, Chunyu Ran, Qi Shen.....	658
Research and Design of Collaborative Learning System Kaiyan Wang, Guzi Huang.....	664
An Individual E-education System Based on Data Mining Zhang Xuemei, Zhang Xiaoming, Zhu Jinjun, et al	667
The WSE and its Application on the Encryption in the Remote Education System Ran Chunyu, Bai Lin, Hao Rui.....	669

11. Distributed Applications in Engineering	672
Solution of the Wigner-Poisson Equations for RTDs M. S. Lasater, C. T. Kelley, A. G. Salinger, et al.....	672
One New Method and Its Parallelization of Perturbation Expansion for Coupled System of Acoustic and Structure Deng Li, Suzuki Masabumi, Hagiwara Ichiro.....	677
Parallel Reservoir Integrated Simulation Platform for One Million Grid Blocks Case Pan Feng, Cao Jianwen, Sun Jiachang.....	681
The Study of Distributed Hydrologic Data Integration Based on CORBA Lou Yuansheng, Wang Zhizian, Ai Ping, et al.....	685
Two Kinds of Novel Evolutionary Fuzzy Controllers — Control Algorithm Analysis Wang Pan, Xu Chengzhi, Zhang Jianjian, et al.....	690
A Study of the Mixed Fuzzy PID Controller in the Accurate Orientation Chen Yunji, Shen Keyu.....	694
Codesign for Complex Hard Real-time Embedded Systems Jin Yongxian.....	700
Development of a Distributed Embedded Remote Control Monitor System Based on CAN Bus Qin Juanying, Feng Xin, Wu Guoping.....	705
Study on Distributed Control System of Fuel Cell Electrical Vehicle Wu Youyu, Yang Jufang, Xie Changjun.....	710
Design of the Distributed Long Distance Water Supply Control System with Process Field Bus Technology Meng Hua, Yan Cuiying, Jia Huiren, et al.....	715
The Research and Application of Real-time Monitor System Based on CAN Bus Network Tao Dexin, Cao Xiaohua, Mo Lili.....	719
Semi-active Logic Control Algorithm for MR Dampers Using Accelerations Feedback Chen Jing, Qu Weilian, Youlin.....	723
Estimate Model of Delay in Autolever System and its Algorithm Design Meigui Han, Jinglu Liu, Guangsheng Dongye.....	727
The Design of Power Battery Management System Based on Distributing CAN Bus Zeng Chunnian, Chen Yu, Qiao Guoyan.....	731
Application of the Distributed Parallel Processing in the DNA Sequence Alignment Mao Liming, Wang Zhongjun, Guo Qingping.....	735
Communication between WDPF and Remote Terminal Unit in Power Plat Yi Kui, Zhu Tianqing.....	739
The Health Monitoring and Damage Identification Platform of the Civil Infrastructure Based on Internet Xiao Chun, Qu Weilian, Zou Chengming.....	743
The Research on Intelligentized Distributed Cooperative Virtual Environment Gao Shu, Cheng Dingfang.....	746
Study on Application of Data Fusion in Erosion Detection of Furnace Lining Liu Quan, Zhang Xiaomei.....	749