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THE NEXT-GENERATION INTERNET

The Internet Technology series is published in May and October every year. The series deals with survey and tutorial articles on current research issues relating to Internet technology. Over the years, there have been a steady and increasing number of submissions to this series, indicating a strong interest in its topics among our readers.

This time, 13 papers were submitted for possible publication in this issue. After a rigorous review process, only three were accepted for this issue.

The next-generation Internet will be characterized by large numbers of devices, high speed, and multiple services over the same network. IPv6 is the next generation of the IP protocol and has been developed by the Internet Engineering Task Force to allow a large number of IP addresses. A number of countries are already testing IPv6 services, and many service providers have adopted multiprotocol label switching (MPLS) to allow multiservice capabilities for users. GMPLS allows integration of the emerging optical networks for providing high bandwidth with MPLS into a common framework. Tatipamula, Le Faucheur, Tomohiro Otani, and Hiroshi Esaki, in their article "Implementation of IPv6 Services over a GMPLS-Based IP/Optical Network," discuss the next-generation architecture for the transport of IPv6 services with GMPLS as the technology for the network backbone.

The Internet has long been the target of attack by hackers by Denial of Service attacks. Gao and Ansari, in their article "Tracing Cyber Attacks from the Practical Perspective," present a brief survey of the most promising recently proposed schemes for tracing cyber attacks. They describe in detail the IP traceback scheme, which aims to locate the actual source of attack packets.

Mobile IP provides a framework for allowing user mobility between IP networks. It is a network layer solution consisting of handoff and location management for mobile users. However, it does not provide quality of service (QoS) guarantees and hence lacks the support of seamless intradomain mobility. Mouftah, Taha, and Hassanein provide an excellent survey and comparison of Mobile IP extensions that have been proposed to enhance the QoS functionality of Mobile IP.

The quality of this series depends on the quality of papers and the stringent refereeing carried out by a large number of volunteers. We would like to thank the authors and reviewers for their time and dedication to this series. We also invite potential authors to continue submitting high-quality papers.

We would like to acknowledge the help of Editor-in-Chief Roch H. Glitho and the IEEE editorial staff, Joe Milizzo and Sue Lange, for helping with the production of this series. We welcome any comments you may have to further improve the quality of this series.

BIOGRAPHIES

MOHAMMED ATIQUZZAMAN [SM] (atiq@ieee.org) received M.Sc. and Ph.D. degrees in electrical engineering from the University of Manchester, England. Currently he is a professor in the School of Computer Science at the University of Oklahoma. He is Co-Editor-in-Chief of *Computer Communications Journal*, and serves on the editorial boards of *IEEE Communications Magazine*, *Telecommunications Systems Journal*, *Wireless and Optical Networks Journal*, and *Real Time Imaging Journal*. He has guest edited many special issues in various journals, and organized special sessions in conferences. He was technical co-chair of HPSR 2003 and the SPIE Quality of Service over Next-Generation Data Networks Conference (2001, 2002, and 2003). He also serves on the technical program committee of many national and international conferences, including IEEE INFOCOM, IEEE GLOBECOM, and IEEE International Conference on Computers and Communication Networks. His current research interests are in wireless, satellite, and mobile networks, QoS for next-generation Internet, broadband networks, multimedia over high-speed networks, TCP/IP over ATM, multiprocessor systems, and image processing. He is a coauthor of the book *TCP/IP over ATM Networks*. He has taught many short courses to industry in the area of computer and telecommunication networking. His research has been supported by state and federal agencies like NSF, NASA, U.S. Air Force, Ohio Board of Regents, and DITARD (Australia). He has over 130 refereed publications in the above areas, most of which can be accessed at <http://www.cs.ou.edu/~atiq>

MOHSEN GUIZANI [SM] (mguizani@cs.wmich.edu) is currently a professor and chair of the Computer Science Department at Western Michigan University. He received his B.S. (with distinction) and M.S. degrees in electrical engineering; and M.S. and Ph.D. degrees in computer engineering in 1984, 1986, 1987, and 1990, respectively, from Syracuse University, New York. His research interests include computer networks, wireless communications and computing, and optical networking. He currently serves on the editorial boards of six technical journals, and Founder and Editor-in-Chief of Wiley's *Wireless Communications and Mobile Computing Journal* (<http://www.interscience.wiley.com/jpages/1530-8669/>). He is the author of four books. He guest edited a number of special issues in journals and magazines. He also served as member, Chair, and General Chair of a number of conferences, including, ICC, GLOBECOM, INFOCOM, and many others. He was the General Chair of IEEE VTC-Fall 2003. He has more than 140 publications in refereed journals and conferences. He is selected as a Distinguished Speaker for IEEE Computer Society until 2005. His research has been supported by Sprint, Telecordia, Navy, and Boeing, to name a few. He received both the Best Teaching Award and the Excellence in Research Award from the University of Missouri-Columbia in 1999 (a college-wide competition). He won the best Research Award from KFUPM in 1995 (a university-wide competition). He was selected as the Best Teaching Assistant for two consecutive years at Syracuse University, 1988 and 1989. He is a member of IEEE ComSoc, IEEE Computer Society, ASEE, ACM, OSA, SCS, and Tau Beta Pi.