TraSH: A TRANSPORT LAYER HANDOFF PROTOCOL FOR MOBILE AND SATELLITE NETWORKS

Mohammed Atiquzzaman
University of Oklahoma
atiq@ou.edu
USA

Abstract   The Internet Engineering Task Force has developed Mobile IP to handle mobility of Internet hosts at the network layer. Mobile IP is also being considered for deployment in space networks. Mobile IP, however, suffers from a number of drawbacks such as high handover latency, packet loss, and conflict with network security solutions. In this talk, we describe TraSH, a new <u>Tra</u>nsport Layer <u>S</u>eamless <u>H</u>andover solution to mobility in both terrestrial and space networks. TraSH utilizes multi-homing to achieve a seamless handover of a mobile host, and is designed to solve many of the drawbacks of Mobile IP. Various aspects, such as handover, signaling, location management, data transfer, and security considerations of TraSH will be discussed. The applicability of TraSH for both terrestrial and space networks will be highlighted. The Stream Control Transmission Protocol (SCTP), with built-in multi-homing capability, is used to illustrate the concepts of TraSH. Mohammed Atiquzzaman obtained his M.S. and Ph.D. in Electrical Engineering and Electronics from the University of Manchester (UK). He is currently a professor in the School of Computer Science at the University of Oklahoma, and a senior member of IEEE.

BRIEF BIO

Dr. Atiquzzaman is the co-editor-in-chief of *Computer Communications* journal since Jan 2003. He also serves on the editorial boards of *IEEE Communications Magazine*, *Telecommunication Systems* Journal, *Real Time Imaging* journal, and *International Journal on Wireless and Optical Communications*. He co-chaired the IEEE *High Performance Switching and Routing Symposium* (2003) and the SPIE *Quality of Service over Next Generation Data Networks* conferences (2001, 2002, 2003). He is the panels co-chair of INFOCOM'05, and is/has been in the program committee of many conferences such as INFOCOM, Globecom, ICCCN, Local Computer Networks, and serves on the review panels at the National Science Foundation. He received the NASA Group Achievement Award for "outstanding work to further NASA Glenn Research Center's effort in the area of Advanced Communications/Air Traffic Management's Fiber Optic Signal Distribution for Aeronautical Communications" project. He is the co-author of the book "Performance of TCP/IP over ATM networks" and has over 130 refereed publications, most of which can be accessed at www.cs.ou.edu/~atiq.

His current research interests are in areas of transport protocols, wireless and mobile networks, adhoc networks, satellite networks, Quality of Service, and optical communications. His research has been funded by National Science Foundation (NSF), National Aeronautics and Space Administration (NASA), and U.S. Air Force.