SEMINAR

SPEAKER: Prof. Pin-Han Ho, University of Waterloo
TOPIC: Shared-Backup Path Protection for GMPLS Networks
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Abstract
Shared-backup path protection (SBPP) has been widely studied in the Generalized MPLS networks due to its efficient spare capacity sharing and flexibility in service provisioning. This talk presents a policy-based model for evaluating the end-to-end (E2E) availability of a SBPP connection by assuming that no more than two simultaneous failures could possibly occur in the network. To minimize the redundancy while meeting the E2E availability requirement, a new parameter is defined for each connection, called protection level, which creates a framework of partial restoration from any unexpected failure. Based on the proposed availability model, two novel policy-based Linear Program (LP) formulations are introduced - called failure dependent and failure independent policies, which aim to reconfigure the spare capacity allocation for dynamic provisioning of SBPP connections. Extensive simulations are conducted to validate the proposed availability model and demonstrate the effectiveness of the spare capacity reconfiguration architecture. The proposed availability-aware spare capacity reconfiguration (SCR) approaches are then implemented on top of a well known survivable routing scheme - Successive Survivable Routing (SSR), where the spare capacity saving ratio is taken as the performance measure. We will show that the proposed SCR framework is an effective approach for achieving the GMPLS-based recovery in packet-switched networks.

Bio
Professor Pin-Han Ho received his B.Sc. and M.Sc. Degree from the Electrical and Computer Engineering department in the National Taiwan University in 1993 and 1995. He started his Ph.D. study in the year 2000 at Queen's University, Kingston, Canada, focusing on optical communications systems, survivable networking, and QoS routing problems. He finished his Ph.D. in 2002, and joined the Electrical and Computer Engineering department in the University of Waterloo, Waterloo, Canada, as an assistant professor at the same year. Professor Pin-Han Ho is the first author of more than 40 refereed technical papers and book chapters, and the co-author of a book on optical networking and survivability. He is the recipient of Distinguished Research Excellent Award in the ECE department of U of Waterloo, Early Researcher Award (Premier Research Excellence Award) in 2005, the Best Paper Award in SPECTS'02 and ICC'05 Optical Networking Symposium, and the Outstanding Paper Award in HPSR'02.