Basics of Computer Networking

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To Marsha,

My Late Wife and Partner

Preface

Computer networking is a fascinating field that has interested many for quite a few years. The purpose of this brief book is to give a general, non-mathematical, introduction to the technology of networks. This includes discussions of types of communication, many networking standards, popular protocols, venues where networking is important such as data centers, cloud computing and grid computing and the most important civilian encryption algorithm, AES.

This brief book can be used in undergraduate and graduate networking courses in universities or by the individual engineer, computer scientist or information technology professional. In universities it can be used in conjunction with more mathematical modeling oriented texts.

I have learned a great deal about networking by teaching undergraduate and graduate courses on the topic at Stony Brook. I am grateful to Dantong Yu of Brookhaven National Laboratory for making me aware of many recent technological developments. Thanks are also due to Brett Kurzman, my editor at Springer, for supporting this brief book project. I would like to acknowledge the assistance in my regular duties at the university of my department's superb staff of Gail Giordano, Carolyn Huggins, Rachel Ingrassia and Debbie Kloppenburg. I would also like to thank Prad Mohanty and Tony Olivo for excellent computer support.

The validation of my writing efforts by my daughters Rachel and Deanna and my good friend Sandy Pike means a lot. Finally I dedicate this brief book to the memory of my late wife and partner, Marsha.

Thomas Robertazzi, Stony Brook NY, September 2011

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