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# TCP / IP PROTOCOL SUITE

**W**e are living in an era of information technology where technologies related to networks and internet-working may be the fastest growing in our culture. One of the ramifications of this growth is a dramatic increase in the number of professions where an understanding of these technologies is essential for success and a proportionate increase in the number and types of students taking courses to learn about them.

The book "TCP/IP Protocol Suite" provides information necessary for students who seek a degree in data communications and networking. It is also a reference for professionals who are supporting or preparing to work with networks based on TCP/IP. In short, this book is for anyone who needs to understand the suite.

This book is divided into five parts. The first part, comprising Chapters 1 to 3, reviews the basic concepts and underlying technologies that, although independent from the TCP/IP protocols, are needed to support them. This section provides an excellent introduction to the network technologies' basics and allows the new readers to get acquainted with the essential framework required for the rest of the book.

The second part of the text discusses the protocols in the network and transport layer of the TCP/IP protocol suite. Chapters 4 to 10 emphasize the network layer protocols. The author provides an excellent and extensive coverage on the practical aspects of the Internet protocol with special references on the IP

addressing along with Subnetting, Supernetting and the upcoming concept of Classless Addressing. The supporting protocol set required for the IP to work with also finds an extensive coverage here.

Transport layer protocols are fully described in Chapters 11,12 and 13. Both UDP and TCP have been explained in a lucid and easy to understand manner. Chapters 14 and 15 are devoted to a detailed description of routing protocols covering the Unicast routing protocols, and the Multicast routing protocols along with a sufficient list of examples and illustrations to make the complex concepts crystal clear to the readers.

The third part discusses the traditional application programs that use the network and transport layer protocols. Chapters 16 to 22 discuss these applications. Having introduced the readers to the intricacies of the TCP and the IP protocols, the author ventures into the applications that use these protocols to provide services to the end users.

The fourth part (Chapters 23 to 27) covers issues and topics relatively new to the Internet. The author discusses IP over ATM, Mobile IP, Multimedia, Private and Virtual Private Networks (VPN), Network Address Translation, and IP Next Generation (IPV6). No efforts have been spared by the author, to include all the recent updates in the relevant area and he has succeeded to a large extent.

The fifth part of the book (Chapter 28) is devoted to network security. This chapter first discusses the concepts and an issue related to security in general and then

shows how these concepts are applied in the Internet. This in-depth coverage of Network Security includes Encryption, Digital Signatures, and a section each on the Pretty Good Privacy, Transport Layer Security and the IPsec.

TCP/IP Protocol Suite teaches students and professionals with no prior knowledge of TCP/IP everything they need to know about the subject. This comprehensive book uses hundreds of figures to make technical concepts easy to grasp, as well as many examples, which help tie the material to the real world. This edition of TCP/IP Protocol Suite has been fully updated to include all of the recent technology changes in the field. Many new chapters have been added and additionally, out-of-date material has been overhauled to reflect recent changes in technology. Several features of this text are designed to make it particularly easy for students to understand TCP/IP. The book presents highly technical subject matter without complex formulas by using a balance of text and figures. Figures are particularly important in explaining networking concepts, which are based on connections and transmission. Often, these are more easily grasped visually rather than verbally.

More than 600 figures accompanying the text provide a visual and intuitive opportunity for understanding the material.

Whenever appropriate, the author has included examples that illustrate the concepts introduced in the text. Also, the book adds real-life applications throughout each chapter to motivate students.

The author without providing a detailed code for implementing each protocol includes a section in the chapters that discusses the general idea behind the implementation of each protocol. These sections provide an understanding of the ideas and issues involved in each protocol, without going in the deep technicalities associated with the code.

Each chapter ends with a summary of the material covered by that chapter. The summary is a bulleted overview of all the key points in the chapter.

Each chapter also includes a practice set designed to reinforce salient concepts and encourage students to apply them. It consists of two parts: exercises and research activities. Exercises require understanding of the material. Research activities challenge those who want to delve more deeply into the material. The book includes nine detailed appendixes intended to provide a quick reference or review of materials needed to understand the concepts discussed and the book contains an extensive glossary and a list of acronyms.

Overall the book is a laudable effort, as it tends to fill a vacuum created by the fast technological changes in this field. The modest pricing by the publishers makes it very affordable and a true value for money investment.