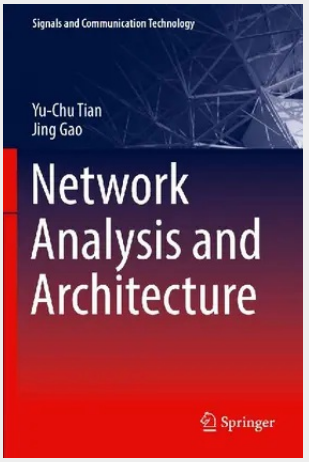
Tian / Gao

Network Analysis and Architecture



This book covers network analysis and architecture for large-scale computer network planning. Networks and the Internet are essential for modern industries and societies. Building a new network, upgrading an existing network, or planning to use a public network requires integrating various network mechanisms and technologies in a cohesive fashion. This demands a deep understanding of the concepts, principles, processes, approaches, and good practices of advanced network planning. More specifically, emphasizing service-based networking, the book introduces structured processes for network planning, provides systematic approaches for network analysis and architecture, develops network planning specifications, and discusses high-level network architectural models from various perspectives. It also offers detailed discussions on component-based architecture about addressing, routing, performance, management, and security and privacy. Recent developments in data centers, virtualization,and cloud are also embedded into the network architecture. Moreover, the book includes a comprehensive introduction to building practical TCP/IP network communications via sockets with practical examples. The book is suitable for use as a textbook for senior undergraduate and postgraduate students or as a reference book for network practitioners looking to develop or enhance their skills in network planning.

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