Data Networking and the Internet

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LIDO TELECOMMUNICATIONS ESSENTIALS®

Part 2 begins with an explanation of data communications fundamentals - establishing a framework for understanding data networking and its applications. Data network alternatives for the local and wide area are explained, demystifying protocols and architectures and their relationship to the OSI reference model. LANs (local area networks) and LAN internetworking are summarized, providing a high level overview of enterprise infrastructures today. WAN (wide area networking) alternatives are reviewed, providing descriptions of their applications, associated network elements, and general tradeoffs. Part 2 also provides an examination of the Internet and IP infrastructures, including Internet basics, Internet addressing and address resolution, the organization of the Internet, IP QoS and a look at what’s next on the Internet.

DATA COMMUNICATIONS BASICS
* The Evolution of Data Communications
* DTE/Transmission Channel/DCE
* Modems & Modulation
* Data Transmission & Measurement
* Transmission Codes
* Transmission Modes
* Error Control
* Protocols & Protocol Stacks
* OSI Reference Model

LOCAL AREA NETWORKING
* LAN Basics
  LAN concepts and benefits, LAN components
* LAN Characteristics
  Transmission media, transport techniques (broadband and baseband), standards (Ethernet, Token Ring), access methods (CSMA/CD, Token Ring), topologies (tree, bus, ring, star)
* LAN Interconnection and internetworking
  Hubs, Switches, VLANs, Bridges, Routers, IP Switches

WIDE AREA NETWORKING
* WAN Introduction and Definitions
* Circuit Switched Alternatives
  Leased lines, ISDN
* Packet Switched Alternatives
  X.25, Frame Relay, ATM, IP and ATM

INTERNET AND IP INFRASTRUCTURES
* Internet Basics
  History, how it works, Internet protocols, Internet architecture
* Internet Addressing and Address Resolution
  Addressing and routing schemes, IPv4, IPv6, DNS
* The Organization of the Internet
  POP architectures, Internet challenges, service providers and interconnection
* IP QoS
  QoS mechanisms, Queueing mechanisms, IP QoS continuum
* What’s Next on the Internet
  NGN Internet, Interplanetary Internet, Internet-enabled devices, RFID applications, SIP telephony,Digital objects and libraries, the Sematic Web

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