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Altri autori (Persone)	DixitSudhir
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Nota di contenuto	IP OVER WDM; CONTENTS; Contributors; Preface; ACKNOWLEDGMENTS; 1 IP-over-WDM Convergence; 1.1 Introduction; 1.2 Why IP and Why WDM?; 1.3 What Does WDM Offer?; 1.4 Capacity, Interface Speeds, and Protocols; 1.5 Why IP over WDM?; 1.6 Book Outline; 1.7 Concluding Remarks; 2 Protocol Design Concepts, TCP/IP, and the Network Layer; 2.1 Introduction; 2.1.1 Protocols and Layering; 2.1.2 Internet Protocol Design: The End-to-End Principle; 2.2 Transport Layer and TCP; 2.2.1 Service Models at the Transport Layer; 2.2.2 UDP and Connectionless Transport; 2.2.3 TCP and Connection-Oriented Transport 2.3 Network Layer 2.3.1 Network Service Models; 2.3.2 Internet Protocol: Forwarding Paradigm; 2.3.3 Internet Protocol: Packet Format, Addressing, and Fragmentation/Reassembly; 2.3.4 Routing in the

Internet; 2.4 Asynchronous Transfer Mode; 2.4.1 ATM Basics; 2.4.2 IP over ATM; 2.5 IP Switching; 2.5.1 Connectionless Services over ATM; 2.5.2 IP Switching Architecture; 2.6 QoS, Integrated Services, and Differentiated Services; 2.6.1 Integrated Services and RSVP; 2.6.2 Differentiated Services; 2.7 Multiprotocol Label Switching; 2.7.1 Labels; 2.7.2 Route Selection; 2.8 Summary; References

3 Optical Enabling Technologies for WDM Systems

- 3.1 Introduction; 3.2 Transmission Limitations in Optical Fiber; 3.2.1 Propagation in Optical Single-Mode Fiber; 3.2.2 Chromatic Dispersion; 3.2.3 Polarization-Mode Dispersion; 3.2.4 Nonlinear Optical Effects; 3.2.5 Types of Single-Mode Optical Fiber; 3.3 Key Technologies for WDM Systems; 3.3.1 WDM Transmitters; 3.3.2 WDM Filter Components; 3.3.3 Erbium-Doped Fiber Amplifiers; 3.3.4 Dispersion Compensation; 3.3.5 Variable Optical Attenuators; 3.3.6 Optical Switching Devices; 3.3.7 Wavelength Converters; 3.4 Development of WDM Systems; 3.5 Summary

References

4 Electro-optic and Wavelength Conversion; 4.1 Introduction; 4.2 Enabling Technologies; 4.2.1 Wavelength-Converter Design; 4.2.2 Wavelength-Convertible Switch Design; 4.3 Network Design, Control, and Management Issues; 4.3.1 Network Design; 4.3.2 Network Control; 4.3.3 Network Management; 4.4 Benefit Analysis; 4.4.1 Analytical Models; 4.4.2 Related Work on Gain Characterization; 4.5 Summary; References

5 Contention Resolution in Optical Packet Switching; 5.1 Introduction; 5.2 Contention Resolution in Wavelength, Time, and Space Domains; 5.2.1 Optical Buffering

- 5.2.2 Wavelength Conversion
- 5.2.3 Space Deflection; 5.2.4 Combination Schemes; 5.2.5 Simulation Experiments and Performance Comparison; 5.3 Priority-Based Routing; 5.3.1 Network Architecture and Routing Policies; 5.3.2 Illustrative Results; 5.4 Slotted versus Unslotted Networks; 5.4.1 Network Architecture and Routing Policies; 5.4.2 Illustrative Results and Discussion; 5.5 Hybrid Contention Resolution for Optical Packet Switching; 5.5.1 Node Architecture; 5.5.2 Simulation Configuration; 5.5.3 Illustrative Results; 5.6 TCP Performance with Optical Packet Switching; 5.6.1 Node Architecture

5.6.2 Simulation Configuration and Numerical Results

Sommario/riassunto

The key technology to delivering maximum bandwidth over networks is Dense Wave-length Division Multiplexing (DWDM). Describes in detail how DWDM works and how to implement a range of transmission protocols. Covers device considerations, the pros and cons of various network layer protocols, and quality of service (QoS) issues. The authors are leading experts in this field and provide real-world implementation examples. First book to describe the interplay between the physical and IP (Internet Protocol) layers in optical networks.
