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In a local area network (LAN) or intranet, there are many pieces of hardware trying to gain access to the network transmission media at the same time (i.e., phone lines, coax, wireless, etc.). However, a network cable or wireless transmission frequency can physically only allow one node to use it at a given time. Therefore, there must be some way to regulate which node has control of the medium (a media access control, or MAC, protocol). Ethernet is a MAC protocol; it is one way to regulate physical access to network transmission media. Ethernet networking is used primarily by networks that are contained within a single physical location. If you need to design, install, and manage a network in such an environment, i.e., home or small business office, then *Ethernet Networking for the Small Office and Professional Home Office* will give you an in-depth understanding of the technology involved in an Ethernet network. One of the major goals of this book is to demystify the jargon of networks so that the reader gains a working familiarity with common networking terminology and acronyms. In addition, this book explains not only how to choose and configure network hardware but also provides practical information about the types of network devices and software needed to make it all work. Tips and direction on how to manage an Ethernet network are also provided. This book therefore goes beyond the hardware aspects of Ethernet to look at the entire network from bottom to top, along with enough technical detail to enable the reader to make intelligent choices about what types of transmission media are used and the way in which the various parts of the network are interconnected. Explains how the Ethernet works, with emphasis on current technologies and emerging trends in gigabit and fast Ethernet, WiFi, routers, and security issues Teaches how to design and select complementary components of Ethernet networks with a focus on home and small business applications Discusses the various types of cables, software, and hardware involved in constructing, connecting, operating and monitoring Ethernet networks & Discover the latest developments in Metro networking, Ethernet, and MPLS services and what they can do for your organization. & & Learn from the easy-to-read format that enables networking professionals of all levels to understand the concepts. & & Gain from the experience of industry innovator and best-selling Cisco Press author, Sam Halabi, author of *Internet Routing Architectures*. A guide to designing and implementing VPLS services over an IP/MPLS switched service provider backbone Today's communication providers are looking for convenience, simplicity, and flexible bandwidth across wide area networks-but with the quality of

service and control that is critical for business networking applications like video, voice and data. Carrier Ethernet VPN services based on VPLS makes this a reality. Virtual Private LAN Service (VPLS) is a pseudowire (PW) based, multipoint-to-multipoint layer 2 Ethernet VPN service provided by services providers. By deploying a VPLS service to customers, the operator can focus on providing high throughput, highly available Ethernet bridging services and leave the layer 3 routing decision up to the customer. Virtual Private LAN Services (VPLS) is quickly becoming the number one choice for many enterprises and service providers to deploy data communication networks. Alcatel-Lucent VPLS solution enables service providers to offer enterprise customers the operational cost benefits of Ethernet with the predictable QoS characteristics of MPLS. Items Covered: Building Converged Service Networks with IP/MPLS VPN Technology IP/MPLS VPN Multi-Service Network Overview Using MPLS Label Switched Paths as Service Transport Tunnels Routing Protocol Traffic Engineering and CSPF RSVP-TE Protocol MPLS Resiliency — Secondary LSP MPLS Resiliency — RSVP-TE LSP Fast Reroute Label Distribution Protocol IP/MPLS VPN Service Routing Architecture Virtual Leased Line Services Virtual Private LAN Service Hierarchical VPLS High Availability in an IP/MPLS VPN Network VLL Service Resiliency VPLS Service Resiliency VPLS BGP Auto-Discovery PBB-VPLS OAM in a VPLS Service Network Understand and evaluate the delivery of Carrier Ethernet using different technologies Carrier Ethernet is rapidly becoming the de facto platform for offering the next generation of high-bandwidth multimedia applications. Delivering Carrier Ethernet: Extending Ethernet Beyond the LAN provides, for the very first time, an in-depth assessment of the various network solutions that can be used to deliver Carrier Ethernet services. The book is based on extensive real-world deployments and is written by globally renowned experts. A standard solution framework is used consistently throughout to address each underlying technology, its benefits and pitfalls, deployment approaches, ongoing developments, economic assessments, and key vendors promoting the solution. The potential evolution of Carrier Ethernet itself is also considered in detail. Copper HFC (Hybrid Fiber-Coax) PONs (Passive Optical Networks) TDM (Time Division Multiplexing) Fiber and WDM (Wavelength Division Multiplexing) Optical Wireless Mesh Network/Free Space Optics SONET (Synchronous Optical Networking)/MSPP (Multi-Service Provisioning Platform) RPR (Resilient Packet Ring) Bridging/Switching MPLS (MultiProtocol Label Switching) WiMAX/WiMAC Ethernet Networks, Fourth Edition, provides everything you need to know to plan, implement, manage and upgrade Ethernet networks. \* Improve your skills in employing Ethernet hubs, switches, and routers. \* Learn how to set up and operate a wireless Local Area Network (LAN). \* Discover how to extend a wired Ethernet via wireless LANs. \* Understand cabling standards and the role of NEXT (Near End Crosstalk), FEXT (Far End Crosstalk) and other transmission parameters. \* Profit from Gilbert Held's tips and tricks on enhancing security ... and much more. This indispensable resource features up-to-date coverage of: \* Wireless Ethernet (IEEE802.11 standards) \* 10Gbps Ethernet \* Firewalls in both a wired and wireless environment \* The operation of new versions of Windows(r) on Ethernet LANs \* The use of LAN switches at and above layer 2 in the ISO reference model \* Copper and fiber optic cable to transport high speed Ethernet Network planners, administrators, and system engineers working with Ethernet networks will find Ethernet Networks, Fourth Edition, an invaluable tool for implementing, updating, and managing their networks. A logical extension of the well - known Ethernet technology, Gigabit Ethernet provides the capacity required for bandwidth - hungry servers, campus backbone networks, and next - generation workstations. The author explains the technology in clear and understandable terms, and explores the implications for its application and operation in real - world networks. You & 'll find essential information on full duplex operation and its implications for network design, the automatic link configuration mechanism, modifications made to the Ethernet Medium Access Control (MAC) algorithms to support 1000 Mb/s operation, and the differences among Gigabit Ethernet hubs, including repeaters, switches, routers, and buffered distributors. Gigabit Ethernet contains a convenient summary of the IEEE 802.3z Gigabit Ethernet standard, and to give you a perspective on Gigabit Ethernet & 's role relative to other high - performance LANs, Seifert compares Gigabit Ethernet to such alternative technologies as Fibre

Channel, FDDI, HIPPI, and ATM. Completely revised to cover a fast Ethernet and other advances in LAN technology, this highly praised, bestselling handbook has helped thousands of Ethernet managers and administrators plan, install, expand, and troubleshoot their networks. Network expert Martin Nemzow has thoroughly updated this comprehensive guide. Ethernet is a core networking technology used by every high tech business. While the basic protocols have changed little, new options such as Fast Ethernet and Gigabit Ethernet have increased the complexity of the topic. Ethernet has been the flavor of choice for networking administrators since the early 1980s because of its ease of use and scalability. Written by one of the foremost experts on Ethernet standards and configuration, Charles E. Spurgeon, *Ethernet: The Definitive Guide* includes everything you need to know to set up and maintain an Ethernet network. *Ethernet: The Definitive Guide* teaches you everything you need to know about the IEEE 802.3 Ethernet standard and its protocols. The book is logically separated into five parts: Introduction to Ethernet provides a tour of basic Ethernet theory and operation, including a description of Ethernet frames, operation of the Media Access Control (MAC) protocol, full-duplex mode and auto-negotiation. Ethernet Media Systems is the heart of the book. This section of *Ethernet: The Definitive Guide* shows you how to build media-specific Ethernet networks, from a basic 10BASE-T Ethernet offering 10 Mbps over twisted-pair cables, to an advanced 1000BASE-X Gigabit Ethernet, providing up to 1 Gbps of data transfer over fiber optic cables. *Building Your Ethernet System* teaches you how to build twisted-pair and fiber optic media segments, as well as how to build your Ethernet using repeaters and hubs. *Performance and Troubleshooting* is divided into two chapters. The first describes both the performance of a given Ethernet channel, as well as the performance of the entire network system. The second includes a tutorial on troubleshooting techniques and describes the kinds of problems network administrators are likely to encounter. The last part of the book includes a complete glossary of terms used throughout the book, a resource list, descriptions of thick and thin coax-based Ethernet systems, a guide to AUI equipment installation and configuration, and a listing of troubleshooting numbers. This book is the definitive guide for anyone wanting to build a scalable local area network (LAN) using Ethernet. One of the most important elements in the computer revolution has been agreement on technological standards. This book tells the complete story of the battle between several competing technologies in the late 1970s and early 1980s to become the compatibility standard in one high-tech arena, the LAN (local area network) industry. Get up to speed with the latest developments in Automotive Ethernet technology and implementation with this fully revised third edition. *Peering Carrier Ethernet Networks* begins by providing background information on the evolution of important concepts and building blocks that have led to the current state of high bandwidth and high performance Ethernet technology in order to support current and emerging customer applications. The background information covered includes an overview of Public Switched Telephone Networks (PSTN) to describe circuit switching, multiplexing, and voice digitization that lead to the development of T1/T3 and SONET/SDH for transport. It interweaves these developments with changes in the regulatory regime. Additional coverage includes Carrier Ethernet networks' technical standards, which describe how service providers can offer services to off-net customers using peered Carrier Ethernet networks and a description of the taxonomy of customers and their current and emerging applications at Layer 2 and Layer 3 on peered Carrier Ethernet networks. The book concludes by describing next steps in Ethernet technology to meet growing demands and emerging trends. Presents detailed coverage of end-to-end services across wide area data networks Consolidates, in one ready reference, the latest applied research in this rapidly evolving field Provides the context, advantages, and industry standards for peering Carrier Ethernet networks *Network Convergence: Ethernet Applications and Next Generation Packet Transport Architectures* provides the guidance and solutions you'll need to understand Ethernet and emerging applications such as cloud computing and mobile apps, as well as large-scale retail and business deployments. This reference starts with an overview of the Ethernet and existing broadband architectures, including XDSL, WIMAX, and VLANs. It moves on to cover next-generation networks and mobile architectures, as well as cloud computing. The book also addresses the convergence of optical, Ethernet and IP/MPLS layers,

considered to be the backbone of next-generation packet transport architecture. If you're a network designer or architect, a technical sales professional, or if you're pursuing technical certifications, you will benefit from Network Convergence's fundamental information on this rapidly evolving technology. Discusses architectural nuances and includes practical case studies for deploying the next-generation framework for each service type Explains data center and cloud computing interconnect schemes for building next-generation cloud infrastructures that support a new array of requirements Provides configuration schemes from leading vendors, including Cisco, Juniper and Alcatel Publisher's Note: Products purchased from Third Party sellers are not guaranteed by the publisher for quality, authenticity, or access to any online entitlements included with the product.

**A Complete Guide to Transmitting Electrical Power and Data over Ethernet Cables Power over Ethernet Interoperability** explains how to safely transmit DC power over an existing data network cabling structure so that separate AC electrical wiring is not needed to power up devices connected to the network. With a focus on cost-effective unshielded twisted pair (UTP) cables, this book provides proven methods for designing reliable Power over Ethernet (PoE) equipment and ensuring that it functions effectively. Details on the IEEE 802.3af/at standards and how various devices can operate from PoE are also contained in this practical resource. Coverage includes: The evolution of PoE Overview of PoE implementations Detection Classification Inrush and power-up Operation Maintain power and disconnect PoE state-machine diagrams Magnetics Isolation, PCB design, and safety Surge testing and protection Lab skills, thermal management, and decoupling N-pair power delivery systems Auxiliary power and flyback design Preface; Introduction to Communications; Networking Fundamentals; Ethernet Networks; Fast and Gigabit Ethernet Systems; Introduction to TCP/IP; Internet Layer Protocols; Host to Host Layer Protocols; Application Layer Protocols; TCP/IP Utilities; LAN System Components; The Internet; Internet Access; The Internet for Communications; Security Considerations; Process Automation; Installing and Troubleshooting TCP/IP; Satellites and TCP/IP.

"An introduction to network design with switches"--Cover. The deployment of Gigabit Ethernet into the MAN/WAN (Metropolitan Area Network/Wide Area Network) arena is one of networking's most profitable areas. This reference clearly explains the technology, standards, and market players. Covers: \* 10GigE and IEEE 802.3ae \* RPR (resilient Packet Ring) \* GigE vs. SONET \* IEEE 802.3z Ethernet Networks, Fourth Edition, provides everything you need to know to plan, implement, manage and upgrade Ethernet networks. \* Improve your skills in employing Ethernet hubs, switches, and routers. \* Learn how to set up and operate a wireless Local Area Network (LAN). \* Discover how to extend a wired Ethernet via wireless LANs. \* Understand cabling standards and the role of NEXT (Near End Crosstalk), FEXT (Far End Crosstalk) and other transmission parameters. \* Profit from Gilbert Held's tips and tricks on enhancing security ... and much more. This indispensable resource features up-to-date coverage of: \* Wireless Ethernet (IEEE802.11 standards) \* 10Gbps Ethernet \* Firewalls in both a wired and wireless environment \* The operation of new versions of Windows(r) on Ethernet LANs \* The use of LAN switches at and above layer 2 in the ISO reference model \* Copper and fiber optic cable to transport high speed Ethernet Network planners, administrators, and system engineers working with Ethernet networks will find Ethernet Networks, Fourth Edition, an invaluable tool for implementing, updating, and managing their networks. Ethernet has emerged as the most popular LAN technology to date. This book focuses on the products, applications and implementation of Fast/Switched Ethernet. In addition, a section discusses the new IEE 803.20 (100BASE.T) standard in greater detail for advanced users. Ethernet is the most widely implemented and popular LAN technology in the world today, and the development of fast and gigabit Ethernet LAN technologies has ensured its continued and growing popularity and utility. If you are a LAN network/system manager, then this book is for you - packed with practical advice and useful reference material, it will ensure that you get the most out of your Ethernet LAN and achieve full control of your network environment. Get up to speed on the latest Ethernet capabilities for building and maintaining networks for everything from homes and offices to data centers and server machine rooms. This thoroughly revised, comprehensive guide covers a wide range of Ethernet technologies, from basic operation to network

management, based on the authors' many years of field experience. When should you upgrade to higher speed Ethernet? How do you use switches to build larger networks? How do you troubleshoot the system? This book provides the answers. If you're looking to build a scalable network with Ethernet to satisfy greater bandwidth and market requirements, this book is indeed the definitive guide. Examine the most widely used media systems, as well as advanced 40 and 100 gigabit Ethernet Learn about Ethernet's four basic elements and the IEEE standards Explore full-duplex Ethernet, Power over Ethernet, and Energy Efficient Ethernet Understand structured cabling systems and the components you need to build your Ethernet system Use Ethernet switches to expand and improve network design Delve into Ethernet performance, from specific channels to the entire network Get troubleshooting techniques for problems common to twisted-pair and fiber optic systems Fast Ethernet is the 100-million-bit-per-second successor to the world's most popular local area network, 10BASE-T Ethernet. Users clamoring for this new, higher-speed LAN technology will benefit from the helpful hints about planning, buying and installing Fast Ethernet contained in this easy-to-understand, complete reference guide. Fast Ethernet: Dawn of a New Network covers the strengths and weaknesses of Fast Ethernet. It offers point-by-point comparisons to other networks, and explains which networks best suit which applications. The book is packed with figures that illustrate practical network topologies, and chart a clear course from 10 Mb/s networking to the ultimate in 100 Mb/s high-speed performance. Ethernet has been the core networking technology since the early 1980s, and is used by every high-tech business. While the basic protocols have changed little, new options such as Fast Ethernet and Gigabit Ethernet have increased the complexity of the topic. Ethernet: The Definitive Guide provides everything you need to know to set up and manage an Ethernet network. Ethernet: The Definitive Guide includes details about the IEEE 802.3 standard and its protocols, and is separated into five parts: Introduction to Ethernet provides a tour of basic Ethernet theory and operation, including a description of Ethernet frames, operation of the Media Access Control (MAC) protocol, full-duplex mode, and Auto-Negotiation. Ethernet Media Systems is the heart of the book. This section shows you how to build media-specific Ethernet networks, from a basic 10BASE-T Ethernet offering 10 Mbps over twisted-pair cables, to an advanced 1000BASE-X Gigabit Ethernet system, providing up to 1 Gbps of data transfer over fiber optic cables. Building Your Ethernet System teaches you how to build twisted-pair and fiber optic media segments, as well as how to expand the reach of your local area network using repeaters and switching hubs. Performance and Troubleshooting is divided into two chapters. The first describes the performance of a given Ethernet channel, as well as the performance of the entire network system. The second chapter includes a tutorial on troubleshooting techniques and describes the kinds of problems; network administrators are likely to encounter. The last part of the book, Appendixes, includes a complete glossary of terms used throughout the book, a resource list, descriptions of thick and thin coax-based Ethernet systems, and a guide to AUI equipment installation and configuration. Ethernet: The Definitive Guide is the one essential source of information for network administrators who need to build and manage scalable local area networks. Martin Nemzow guides readers through sample installation and migration scenarios, including a small LAN, "typical" office, office building floor, and multiple building site. He provides helpful advice on how to decipher the many competing standards, wiring options, and infrastructure technologies. Readers also learn how to optimize Fast Ethernet networks after implementation. Facilitating high data transfers over long distances at a reasonable cost, Carrier Ethernet is solidifying its fundamental position as the core of next-generation networks. Since it first dazzled the IT world 40 years ago with its ability to move data over local networks, Ethernet has dramatically evolved in both form and function. And now, Carrier Ethernet, flexing its multi-gigabit muscle, is rapidly emerging as the undisputed technology of choice. As engaging as it is comprehensive, this volume— Examines the differences between the so-called flavors of Ethernet Provides refreshers on virtual LANs (VLANs), virtual private networks (VPNs), and Multi-Protocol Label Switching (MPLS) Details Carrier advantages over other modalities with regard to network performance Delves into Service Level Agreements, including ways to obtain a quality of service for the movement of voice and real-time video, as well as the creation of VLANs to

facilitate the movement of data Describes various services that can be enabled over an Ethernet infrastructure All You Need to Know about this Carrier-Class System Ensuring seamless migration to Carrier Ethernet from existing technologies, as well as integration with emerging services, this text provides readers with the expert guidance needed to make full use of Ethernet technology, both now and into the future. Learn how automotive Ethernet is revolutionizing in-car networking from the experts at the core of its development. Providing an in-depth account of automotive Ethernet, from its background and development, to its future prospects, this book is ideal for industry professionals and academics alike. This book is an entry-level introduction to Carrier Ethernet, intended for anyone new to Carrier Ethernet, including those with little or no background in computer networking and/or telecommunications. It has two aims: (1) to explain networking technology leading up to and motivating Carrier Ethernet and (2) to explain Carrier Ethernet conceptually within this framework. This book was conceived to be a prequel to Fujitsu's MEF-CECP Study Guide (any edition), but can be used alone (as an introduction to Carrier Ethernet) or in combination with other professional certification training materials. Carrier Ethernet emerges in the overlap between two highly evolved realms of commercial networking technology: (1) enterprise computer networking and (2) telecommunications networking. At one time these realms were very distinct, but for some years now they have been evolving toward convergence. Many professionals interested in Carrier Ethernet lack fundamental knowledge in one or both realms, as well as a clear framework for understanding their convergence and Carrier Ethernet's place in the evolution. Training resources for Carrier Ethernet professional certification tend to assume significant background knowledge and focus on mastering the details needed to pass an exam over core fundamentals and motivations. This book is designed to complement such material, focusing instead on explaining the big picture, the core background technologies, the context, the motivations, and the concepts that underpin Carrier Ethernet. The main goal is to impart a strong foundation for understanding Carrier Ethernet in a general sense. A secondary goal is to offer insights into the evolution of networking technology and the issues that surround and motivate Carrier Ethernet. Chapter 1 provides a synopsis of the book and a brief explanation of Carrier Ethernet. Chapter 2 explains Ethernet in local area networking, starting from first principles and simple contexts and gradually building up to include MAC bridging and VLAN bridging. Chapter 3 describes traditional Telecom technology and wide area networking solutions prior to Carrier Ethernet. Chapter 4 provides a high-level overview of Carrier Ethernet. The appendix includes supportive details related to various of topics covered in the book. This 2nd Edition of the book was published mainly to change the book's subtitle. A guide to using embedded systems with Ethernet covers such topics as hardware and firmware, TCP/IP protocols, creating embedded Web sites, local networks and the Internet, and sending and receiving e-mail using SMTP and POP3.

**AUTONOMOUS AND CONNECTED VEHICLES** Discover the latest developments in autonomous vehicles and what the future holds for this exciting technology In *Autonomous and Connected Vehicles*, networking experts Dominique Paret and Hassina Rebaine deliver a robust exploration of the major technological changes taking place in the field, and describe the different levels of autonomy possible with current technologies and the legal and regulatory contexts in which new autonomous vehicles will circulate. The book also includes discussions of the sensors, including infrared, ultrasound, cameras, lidar, and radar, used by modern autonomous vehicles. Readers will enjoy the intuitive descriptions of Advanced Driver Assistance Systems (ADAS), network architectures (CAN-FD, FlexRay, and Backbone Ethernet), and software that power current and future autonomous vehicles. The authors also discuss how ADAS can be fused with data flowing over newer and faster network architectures and artificial intelligence to create greater levels of autonomy. The book also includes: A thorough introduction to the buzz and hype surrounding autonomous and connected vehicles, including a brief history of the autonomous vehicle Comprehensive explorations of common issues affecting autonomous and connected vehicles, including regulatory guidelines, legislation, relevant norms and standards, and insurance issues Practical discussions of autonomous vehicle sensors, from DAS to ADAS and HADAS, and VA L3 to L5 In-depth examinations of networks and

architecture, including discussions of data fusion, artificial intelligence, and hardware architecture in vehicles Perfect for graduate and undergraduate students in programs dealing with the intersection of wireless communication technologies and vehicles, Autonomous and Connected Vehicles is also a must-read reference for industry professionals and researchers seeking a one-stop reference for the latest developments in vehicle communications technology. This volume explains the technical details of the main Ethernet family members, starting with the familiar 10Base-T, through Fast Ethernet, to the latest Gigabit Ethernet and wireless variants. The applications that can now be supported on a uniform network technology are also explained. This book provides a comprehensive understanding of current and debated future networking technologies. It gives insight into building end-to-end networks and services with Carrier Ethernet, PBT, MPLS-TP, and VPLS while also shedding light on the pros and cons of these technologies for service providers and enterprise network owners. Focusing on layer-2 networking and services, Networks and Services covers: The basics of Ethernet such as protocol stack, bridges, switches, and hubs Key techniques that are being used in building carrier-class Carrier Ethernet networks and services like synchronization, pseudowires, and protection Carrier Ethernet network architectures and services that are currently deployed in the industry Traffic management and OAM capabilities of Carrier Ethernet Circuit Emulation Services PBB and PBT to resolve possible scalability issues of Carrier Ethernet Technologies that are competing or working with Carrier Ethernet in forming data networks and services, Transport MPLS, MPLS Transport Profile, and VPLS Networks and Services: Carrier Ethernet, PBT, MPLS-TP, and VPLS is ideal for network architects, engineers, and planning professionals in telecommunications, as well as students and researchers in related disciplines. CD-ROM contains: Fully searchable digital edition of book in PDF format -- Adobe Reader 4.0. PROFINET is the first integrated Industrial Ethernet Standard for automation, and utilizes the advantages of Ethernet and TCP/IP for open communication from the corporate management level to the process itself. PROFINET CBA divides distributed, complex applications into autonomous units of manageable size. Existing fieldbuses such as PROFIBUS and AS-Interface can be integrated using so-called proxies. This permits separate and cross-vendor development, testing and commissioning of individual plant sections prior to the integration of the solution as a whole. PROFINET IO, with its particularly fast real-time communication, fulfills all demands currently placed on the transmission of process data and enables easy integration of existing fieldbus systems. Isochronous real-time (IRT) is used for isochronous communication in motion control applications. PROFINET depends on established IT standards for network management and teleservice. Particularly to automation control engineering it offers a special security concept. Special industrial network technology consisting of active network components, cables and connection systems, together with recommendations for installation, complete the concept. This book serves as an introduction to PROFINET technology. Configuring engineers, commissioning engineers and technicians are given an overview of the concept and the fundamentals they need to solve PROFINET-based automation tasks. Technical relationships and practical applications are described using SIMATIC products as example. Get up to speed on the latest Ethernet capabilities for building and maintaining networks for everything from homes and offices to data centers and server machine rooms. This thoroughly revised, comprehensive guide covers a wide range of Ethernet technologies, from basic operation to network management, based on the authors' many years of field experience. When should you upgrade to higher speed Ethernet? How do you use switches to build larger networks? How do you troubleshoot the system? This book provides the answers. If you're looking to build a scalable network with Ethernet to satisfy greater bandwidth and market requirements, this book is indeed the definitive guide. Examine the most widely used media systems, as well as advanced 40 and 100 gigabit Ethernet Learn about Ethernet's four basic elements and the IEEE standards Explore full-duplex Ethernet, Power over Ethernet, and Energy Efficient Ethernet Understand structured cabling systems and the components you need to build your Ethernet system Use Ethernet switches to expand and improve network design Delve into Ethernet performance, from specific channels to the entire network Get troubleshooting techniques for problems common to twisted-pair and fiber optic systems Ethernet Passive Optical

Networks is the IEEE's (Institute of Electrical and Electronics Engineers) approved architecture of choice for the next generation of broadband access. Written by an author of the IEEE 802.3ah standard, this is the first book to explain the EPON architecture, analyze its performance, and annotate the standard. For any engineer or graduate student building equipment for broadband access or service provider offering such service, this will serve as the "authorized" guide to EPON.

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