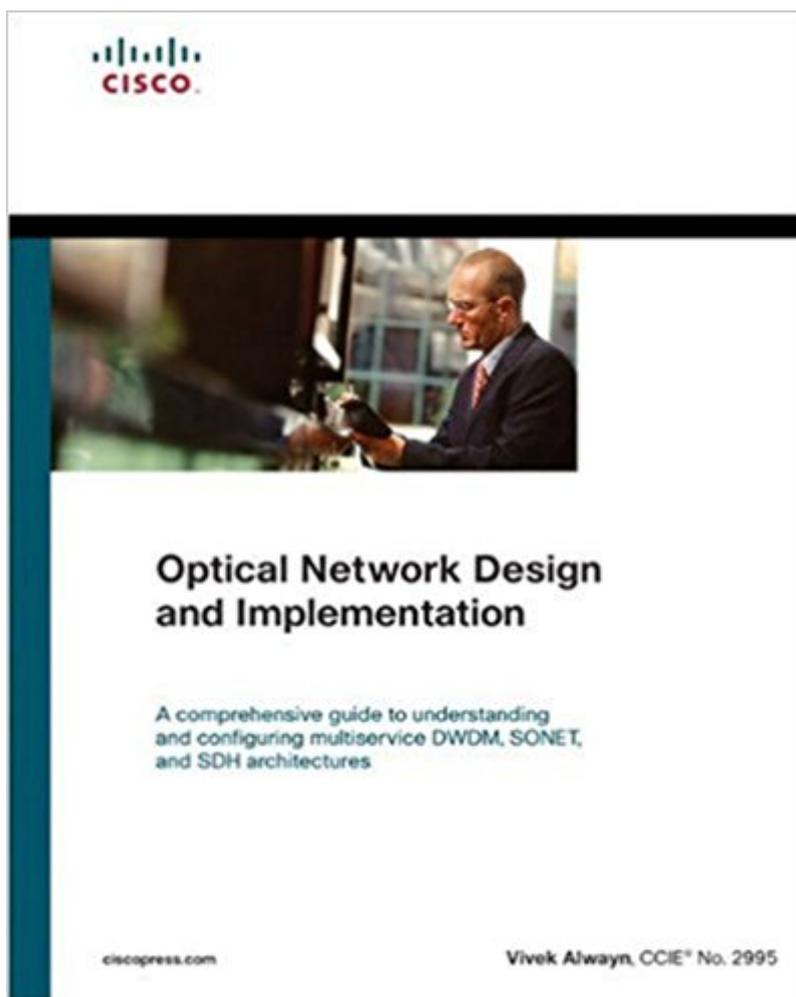The book was found

Optical Network Design And Implementation

Synopsis

A comprehensive guide to understanding and configuring multiservice DWDM, SONET, and SDH architectures Optical Network Design and Implementation provides in-depth coverage of the following: DS1/DS3/E1/E3 over SONET/SDH IEEE 802.17 Resilient Packet Ring (RPR) Fast/Gigabit Ethernet over SONET/SDH VRF virtual private networks Double-tagged 802.1Q VPNs SAN transport, FICON, and Fibre Channel over SONET/SDH DWDM infrastructures Analysis of DWDM, SONET, and SDH architectures Multiservice optical networking has multiple applications in service provider and enterprise environments. To help you make the most of these applications, Optical Network Design and Implementation provides a complete reference of technology solutions for next-generation optical networks. The book explains the differences among various MAN technologies, getting you up to speed on the solutions you need to use. Optical Network Design and Implementation contains a broad range of technical details on multiservice optical networking and covers optical networking theory, design, and configuration by providing informative text, illustrations, and examples. It can be used as a reference for anyone designing, implementing, or supporting an optical network. Even if you're not using Cisco ONS equipment, this book can increase your awareness and understanding of optical technologies and provide you with detailed design concepts and rules for building highly scalable multiservice optical networks. This book covers the entire spectrum of optical networking technologies from the physical layer to the network layer. If you are a network architect, network manager, or a consultant who designs, deploys, operates, or troubleshoots multiservice optical and DWDM networks, Optical Network Design and Implementation is your comprehensive guide to optical networking. "This represents the first book that offers a comprehensive and technical guide to unique IP+Optical innovations with Cisco COMET." -Jayshree V. Ullal, Senior Vice President, Optical Networking Group Cisco Systems, Inc. This book is part of the Networking Technology Series from Cisco Press, which offers networking professionals valuable information for constructing efficient networks, understanding new technologies, and building successful careers. 1587051052203152004

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Customer Reviews

This book is probably the most comprehensive and in-depth source of information about optical networking that I have ever read. The book opens with an introduction to optical networking, discusses SONET/SDH architectures, and briefly presents all the concepts and technologies, which are covered in detailed later chapters.The second chapter delves immediately into the details of Time Division Multiplexing (TDM) and analog signal processing. T-carrier and E-carrier hierarchies and their signaling and framing formats are examined, followed-up by a review of the ISDN BRI/PRI standard and ISDN frame formats.The next section of the book looks at the physical characteristics of fiber optics including the materials used, physical construction of the cable, and behavioral and performance characteristics of different optical materials under differing conditions. For those interested in calculating their own measurements, refraction, power measurement, and span loss formulas are presented along with a few case studies as examples. Splicing techniques and optical connectors are also covered here. Wavelength-Division Multiplexing (WDM) (both coarse and dense) and various dispersion compensation techniques finish up this section.Chapters 5 and 6 cover SONET and SDH architectures respectively. This is a fairly thorough examination of the two standards and includes a detailed look at the electrical and optical signals, SONET/SDH technology layers, framing, transmission overhead, multiplexing, error reporting, topologies and topology protection strategies, to name just a few! Packet ring technologies such as gigabyte Ethernet and Multi-service Provisioning Platform (MSPP) are also presented in this section for those applications where end-to-end Ethernet framing is desirable.

Where do I start with such a superb book? I recently read the book titled "Optical Network Design and Implementation" by Vivek Alwayn. ISBN: 1587051052. I had looked at several sources for a good book on optical networks. After searching technical bookstores and on-line searches, I became discouraged. I usually have high expectations when it comes to books. Then I finally found

this one, which blew my expectations out of the water. This book is a great resource of information regarding optical networking.This book goes into significant detail about the different technologies that make up optical networking. The book covers everything from the refraction of light to different multiplexing methods.I would recommend this book to any Network Engineer that is interested in optical networks. The content relates mostly to work in the services provider space, but for people like me that can't stand not knowing, this is it.There is literally at least one figure per page if not more. The author and contributors have done a superb job of making sure the appropriate illustrations; tables and figures are in the detail of the book. These figures assist a great deal when attempting to accurately comprehend a certain topic or technology.The first half of the book is strictly standards technology. The author wastes no time at all diving into technology. This book is strictly for the engineer. Lightweights need not apply.The second half of the book provides detailed information on Cisco's arsenal of equipment that provide Multiservice SONET and SDH functions. The author includes screen shots of the configuration examples along the way.

I work for a switch fabric semiconductor company. I wanted to gain a better understanding of the types of systems that our components would be used in, specifically relating to IP-over-SONET traffic, MSPPs and ring protection mechanisms. This book fit the bill quite nicely. It covers the basics of fiber optic technology, including DWDM. The treatment of SONET and SDH is very thorough, with good illustrations included. The last part of the book deals specifically with the provisioning and applications of various Cisco ONSs. I found the Network Case Studies in the last chapter to be very informative, as it helps reinforce the material and demonstrate how it can be applied to a real-world network.I give the review 4 stars, for a couple reasons. First, having experience as a designer of fiber optic transponder modules, I felt that the treatment of fiber optic technologies and DWDM in chapters 3 and 4 was a little on the light side. Some of the important concepts, such as chromatic dispersion, are treated in somewhat vague terms and could be explained more fully, without getting too technical. For a better understanding of such concepts, I recommend "Understanding Fiber Optics" by Hecht.Also, there are numerous small errors in the book that may lead to misunderstanding of the material. Some errors look like simple typos, and others are technical errors. They are too numerous to list here, but hopefully an errata or second revision will be published to correct these. For example, in the unidirectional and bidirectional rings shown in figures 5-36 through 5-38, the east and west traffic directions are swapped. This may cause confusion when attempting to trace the traffic flow in the diagrams, as described in the text (which is correct).

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