

## Wireless Networking Introduction To Bluetooth And Wifi

How prepared are you to build fast and efficient web applications? This eloquent book provides what every web developer should know about the network, from fundamental limitations that affect performance to major innovations for building even more powerful browser applications—including HTTP 2.0 and XHR improvements, Server-Sent Events (SSE), WebSocket, and WebRTC. Author Ilya Grigorik, a web performance engineer at Google, demonstrates performance optimization best practices for TCP, UDP, and TLS protocols, and explains unique wireless and mobile network optimization requirements. You'll then dive into performance characteristics of technologies such as HTTP 2.0, client-side network scripting with XHR, real-time streaming with SSE and WebSocket, and P2P communication with WebRTC. Deliver superlative TCP, UDP, and TLS performance Speed up network performance over 3G/4G mobile networks Develop fast and energy-efficient mobile applications Address bottlenecks in HTTP 1.x and other browser protocols Plan for and deliver the best HTTP 2.0 performance Enable efficient real-time streaming in the browser Create efficient peer-to-peer videoconferencing and low-latency applications with real-time WebRTC transports

Wireless mesh networks (WMN) encompass a new area of technology set to play an important role in the next generation wireless mobile networks. WMN is characterized by dynamic self-organization, self-configuration, and self-healing to enable flexible

integration, quick deployment, easy maintenance, low costs, high scalability, and reliable services.

This book explains what is Bluetooth technology and why it is important for so many types of consumer electronics devices. Since it was first officially standardized in 1999, the Bluetooth market has grown to more than 35 million devices per year. You will find out how Bluetooth devices can automatically locate nearby Bluetooth devices, authenticates them, discover their capabilities, and the process used to setup connections with them. You will learn how the use of standard profiles allows Bluetooth devices from different manufacturers to communicate with each other and work together in the same way. Bluetooth devices operate in the frequency band where other devices operate including wireless LAN, microwave ovens, cordless telephones, wireless video cameras, and others. This will explain how Bluetooth's spread spectrum technology minimizes interference to and from other devices. Bluetooth was designed to be a simple low power radio link to primarily replace cables for short range connections. While the use of a simple design results in an efficient wireless communication device, it does mean that Bluetooth does not perform the same as other wireless technologies. You will discover in this book how Bluetooth compares to other technologies such as WLAN systems. Bluetooth has several user programmable options including the ability to hide devices (non-discoverable) and the ability to require other users to authenticate before allowing other devices to connect to your device. In this book, you will learn

about key options that you may set and how it may affect the operation of your Bluetooth device and applications. Bluetooth continues to change. There have already been several revisions and more revisions are planned for the future. These revisions include faster data transmission rates, new profiles, and more.

The book provides a complete and detailed description of the recent wireless technologies including Wi-Fi, Bluetooth, ZigBee and WiMAX. These technologies are considered to be important topics in the telecommunication industry in the next decade. Some critical subjects are particularly developed such as security, quality of service, roaming and power conservation. The book also includes some chapters on practical aspects.

This guide is specifically written for the network technician and the helpdesk technician who has limited experience in troubleshooting connectivity issues relating to the wireless portion of their network. Its focus is to provide you a streamlined set of troubleshooting procedures resulting in the timely and accurate diagnosis of wireless connectivity issues without requiring you to be a wireless expert or to wade through lengthy explanation and theory. As such, it is not meant to be an in depth treatise on wireless theory, installation, or design - but rather a "down and dirty" resource for troubleshooting the more common connectivity issues occurring with an already existing wireless network.

Wireless is a term used to describe telecommunications in which electromagnetic

waves (rather than some form of wire) carry the signal over part or all of the communication path and the network is the totality of switches, transmission links and terminals used for the generation, handling and receiving of telecoms traffic. Wireless networks are rapidly evolving, and are playing an increasing role in the lives of people throughout the world and ever-larger numbers of people are relying on the technology directly or indirectly. The area of wireless communications is an extremely rich field for research, due to the difficulties posed by the wireless medium and the increasing demand for better and cheaper services. As the wireless market evolves, it is likely to increase in size and possibly integrate with other wireless technologies, in order to offer support for mobile computing applications, of perceived performance equal to those of wired communication networks. Wireless Networks aims to provide an excellent introductory text covering the wireless technological alternatives offered today. It will include old analog cellular systems, current second generation (2G) systems architectures supporting voice and data transfer and also the upcoming world of third generation mobile networks. Moreover, the book features modern wireless technology topics, such as Wireless Local Loops (WLL), Wireless LANs, Wireless ATM and Personal Area Networks (such as Bluetooth). \* Provides an easy to use reference which presents a clear set of technologies per chapter \* Features modern wireless technology topics, such as Wireless Local Loops (WLL), Wireless LANs, Wireless ATM, Personal Area Networks (such as Bluetooth) and Ad-hoc wireless networks \*

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Progresses through the developments of first, second, third, fourth generation cellular systems and beyond \* Includes helpful simulation examples and examples of algorithms and systems Essential reading for Senior undergraduate and graduate students studying computer science, telecommunications and engineering, engineers and researchers in the field of wireless communications and technical managers and consultants.

Wireless communications have become indispensable part of our lives. The book deals with the security of such wireless communication. The technological background of these applications have been presented in detail. Special emphasis has been laid on the IEEE 802.11x-standards that have been developed for this technology. A major part of the book is devoted to security risks, encryption and authentication. Checklists have been provided to help IT administrators and security officers to achieve the maximum possible security in their installations, when using wireless technology. This is the second edition of the book. The updates include the latest the IEEE 802.11-standard, an updated chapter on PDA, the increased relevance of smart phones and tablets, widespread use of WLAN with increased security risks.

Provides a practical introduction written by engineers from the leading wireless LAN manufacturers Each chapter brings the reader up-to-date with the latest in LAN technology from such companies as 3com, Alcatel, Ericsson, Intermec, Mobilian, Cisco Systems, Texas Instruments, Time Domain Corp., and Network Associates Provides

detailed information for anyone who wants to learn about, implement, or invest in wireless LAN technology Features chapters on security, Bluetooth, spectrum allocation, QoS, ultra-wideband wireless, key standards, and more

Use the power of BLE to create exciting IoT applications About This Book Build hands-on IoT projects using Bluetooth Low Energy and learn about Bluetooth 5 and its features. Build a health tracking system, and indoor navigation and warehouse weather monitoring projects using smart devices. Build on a theoretical foundation and create a practice-based understanding of Bluetooth Low Energy. Who This Book Is For If you're an application developer, a hardware enthusiast, or just curious about the Internet of Things and how to convert it into hands-on projects, then this book is for you. Having some knowledge of writing mobile applications will be advantageous. What You Will Learn Learn about the architecture and IoT uses of BLE, and in which domains it is being used the most Set up and learn about various development platforms (Android, iOS, Firebase, Raspberry Pi, Beacons, and GitHub) Create an Explorer App (Android/iOS) to diagnose a Fitness Tracker Design a Beacon with the Raspberry Pi and write an app to detect the Beacon Write a mobile app to periodically poll the BLE tracking sensor Compose an app to read data periodically from temperature and humidity sensors Explore more applications of BLE with IoT Design projects for both Android and iOS mobile platforms In Detail Bluetooth Low Energy, or Bluetooth Smart, is Wireless Personal Area networking aimed at smart devices and IoT applications. BLE

has been increasingly adopted by application developers and IoT enthusiasts to establish connections between smart devices. This book initially covers all the required aspects of BLE, before you start working on IoT projects. In the initial stages of the book, you will learn about the basic aspects of Bluetooth Low Energy—such as discovering devices, services, and characteristics—that will be helpful for advanced-level projects. This book will guide you through building hands-on projects using BLE and IoT. These projects include tracking health data, using a mobile App, and making this data available for health practitioners; Indoor navigation; creating beacons using the Raspberry Pi; and warehouse weather Monitoring. This book also covers aspects of Bluetooth 5 (the latest release) and its effect on each of these projects. By the end of this book, you will have hands-on experience of using Bluetooth Low Energy to integrate with smart devices and IoT projects. **Style and Approach** A practical guide that will help you promote yourself into an expert by building and exploring practical applications of Bluetooth Low Energy.

This book focuses on providing a detailed and practical explanation of key existing and emerging wireless networking technologies and trends, while minimizing the amount of theoretical background information. The book also goes beyond simply presenting what the technology is, but also examines why the technology is the way it is, the history of its development, standardization, and deployment. The book also describes how each technology is used, what problems it was designed to solve, what problems it was not

designed to solve., how it relates to other technologies in the marketplace, and internetworking challenges faced within the context of the Internet, as well as providing deployment trends and standardization trends. Finally, this book decomposes evolving wireless technologies to identify key technical and usage trends in order to discuss the likely characteristics of future wireless networks.

**The First Complete Guide to Bluetooth Low Energy: How It Works, What It Can Do, and How to Apply It** A radical departure from conventional Bluetooth technology, Bluetooth low energy (BLE) enables breakthrough wireless applications in industries ranging from healthcare to transportation. Running on a coin-sized battery, BLE can operate reliably for years, connecting and extending everything from personal area network devices to next-generation sensors. Now, one of the standard's leading developers has written the first comprehensive, accessible introduction to BLE for every system developer, designer, and engineer. Robin Heydon, a member of the Bluetooth SIG Hall of Fame, has brought together essential information previously scattered through multiple standards documents, sharing the context and expert insights needed to implement high-performance working systems. He first reviews BLE's design goals, explaining how they drove key architectural decisions, and introduces BLE's innovative usage models. Next, he thoroughly covers how the two main parts of BLE, the controller and host, work together, and then addresses key issues from security and profiles through testing and qualification. This knowledge has enabled the creation of Bluetooth Smart



and Bluetooth Smart Ready devices. This guide is an indispensable companion to the official BLE standards documents and is for every technical professional and decision-maker considering BLE, planning BLE products, or transforming plans into working systems. Topics Include BLE device types, design goals, terminology, and core concepts Architecture: controller, host, applications, and stack splits Usage models: presence detection, data broadcasting, connectionless models, and gateways Physical Layer: modulation, frequency band, radio channels, power, tolerance, and range Direct Test Mode: transceiver testing, hardware interfaces, and HCI Link Layer: state machine, packets, channels, broadcasting, encryption, and optimization HCI: physical/logical interfaces, controller setup, and connection management L2CAP: channels and packet structure, and LE signaling channels Attributes: grouping, services, characteristics, and protocols Security: pairing, bonding, and data signing Generic Access Profiles: roles, modes, procedures, security modes, data advertising, and services Applications, devices, services, profiles, and peripherals Testing/qualification: starting projects, selecting features, planning, testing, compliance, and more

As the demand for higher bandwidth has lead to the development of increasingly complex wireless technologies, an understanding of both wireless networking technologies and radio frequency (RF) principles is essential for implementing high performance and cost effective wireless networks. Wireless Networking Technology

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clearly explains the latest wireless technologies, covering all scales of wireless networking from personal (PAN) through local area (LAN) to metropolitan (MAN). Building on a comprehensive review of the underlying technologies, this practical guide contains 'how to' implementation information, including a case study that looks at the specific requirements for a voice over wireless LAN application. This invaluable resource will give engineers and managers all the necessary knowledge to design, implement and operate high performance wireless networks. · Explore in detail wireless networking technologies and understand the concepts behind RF propagation. · Gain the knowledge and skills required to install, use and troubleshoot wireless networks. · Learn how to address the problems involved in implementing a wireless network, including the impact of signal propagation on operating range, equipment interoperability problems and many more. · Maximise the efficiency and security of your wireless network.

Wireless Networking Introduction to Bluetooth and Wifi Independently Published  
This eBook provides comprehensive information on wireless technologies Bluetooth and Wifi. The book details the use cases for the above mentioned technologies, provides detailed descriptions on their technology architectures and protocol stacks and rounds up with a comparative analysis with other competing wireless technologies. The book is a good read for someone just getting to know these wireless technologies as it starts from the ground up and covers a lot of base to give you a very good perspective

in the shortest amount of time.

Introductory textbook in the important area of network security for undergraduate and graduate students Comprehensively covers fundamental concepts with newer topics such as electronic cash, bit-coin, P2P, SHA-3, E-voting, and Zigbee security Fully updated to reflect new developments in network security Introduces a chapter on Cloud security, a very popular and essential topic Uses everyday examples that most computer users experience to illustrate important principles and mechanisms Features a companion website with Powerpoint slides for lectures and solution manuals to selected exercise problems, available at <http://www.cs.uml.edu/~wang/NetSec>

This revised edition of Communication Systems from GSM to LTE: An Introduction to Mobile Networks and Mobile Broadband Second Edition (Wiley 2010) contains not only a technical description of the different wireless systems available today, but also explains the rationale behind the different mechanisms and implementations; not only the 'how' but also the 'why'. In this way, the advantages and also limitations of each technology become apparent. Offering a solid introduction to major global wireless standards and comparisons of the different wireless technologies and their applications, this edition has been updated to provide the latest directions and activities in 3GPP standardization up to Release 12, and importantly includes a new chapter on Voice over LTE (VoLTE). There are new sections on Building Blocks of a Voice Centric Device, Building Blocks of a Smart Phone, Fast Dormancy, IMS and High-Speed

Downlink Packet Access, and Wi-Fi-Protected Setup. Other sections have been considerably updated in places reflecting the current state of the technology. • Describes the different systems based on the standards, their practical implementation and design assumptions, and the performance and capacity of each system in practice is analyzed and explained • Questions at the end of each chapter and answers on the accompanying website make this book ideal for self-study or as course material

Following the pattern of the Internet growth in popularity, started in the early 1990s, the current unprecedented expansion of wireless technology promises to have an even greater effect on how people communicate and interact, with considerable socio-economic impact all over the world. The driving force behind this growth is the remarkable progress in component miniaturization, integration, and also developments in waveforms, coding, and communication protocols. Besides established infrastructure-based wireless networks (cellular, WLAN, satellite) ad-hoc wireless networks emerge as a new platform for distributed applications and for personal communication in scenarios where deploying infrastructure is not feasible. In ad-hoc wireless networks, each node is capable of forwarding packets on behalf of other nodes, so that multi-hop paths provide end-to-end connectivity. The increased flexibility and mobility of ad-hoc wireless networks are favored for applications in law enforcement, homeland defense and military. In a world where wireless networks become increasingly interoperable with each other and with the high-speed wired Internet,

personal communication systems will transform into universal terminals with instant access to variate content and able of handle demanding tasks, such as multimedia and real-time video. With users roaming between networks, and with wide variation in wireless link quality even in a single domain, the communications terminal must continue to provide a level of Quality of Service that is acceptable to the user and conforms to a contracted Service Level Agreement.

This first-of-its-kind book, from expert authors actively contributing to the evolution of Bluetooth specifications, provides an overview and detailed descriptions of all the security functions and features of this standard's latest core release. After categorizing all the security issues involved in ad hoc networking, this hands-on volume shows you how to design a highly secure Bluetooth system and implement security enhancements. The book also helps you fully understand the main security risks involved with introducing Bluetooth-based communications in your organization

This definitive handbook demystifies personal-area networking technologies and protocols and explores their application potential in a unique real-world context.

Make the most of your wireless network...without becoming a technical expert! This book is the fastest way to connect all your wireless devices, get great performance with everything from streaming media to printing, stay safe and secure, and do more with Wi-Fi than you ever thought possible! Even if you've never set up or run a network before, this book will show you how to do what you want, one incredibly clear and easy step at a time. Wireless networking has never, ever been this simple! Who knew how simple wireless networking could be? This is

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today's best beginner's guide to creating, using, troubleshooting, and doing more with your wireless network...simple, practical instructions for doing everything you really want to do, at home or in your business! Here's a small sample of what you'll learn:

- Buy the right equipment without overspending
- Reliably connect Windows PCs, Macs, iPads, Android tablets, game consoles, Blu-ray players, smartphones, and more
- Get great performance from all your networked devices
- Smoothly stream media without clogging your entire network
- Store music and movies so you can play them anywhere in your home
- Keep neighbors and snoopers out of your network
- Share the files you want to share—and keep everything else private
- Automatically back up your data across the network
- Print from anywhere in the house—or from anywhere on Earth
- Extend your network to work reliably in larger homes or offices
- Set up a “guest network” for visiting friends and family
- View streaming videos and other web content on your living room TV
- Control your networked devices with your smartphone or tablet
- Connect to Wi-Fi hotspots and get online in your car
- Find and log onto hotspots, both public and hidden
- Quickly troubleshoot common wireless network problems

Michael Miller is the world's #1 author of beginning computer books. He has written more than 100 best-selling books over the past two decades, earning an international reputation for his friendly and easy-to-read style, practical real-world advice, technical accuracy, and exceptional ability to demystify complex topics. His books for Que include *Computer Basics Absolute Beginner's Guide*; *Facebook for Grown-Ups*; *My Pinterest*; *Ultimate Digital Music Guide*; *Speed It Up! A Non-Technical Guide for Speeding Up Slow PCs*, and *Googlepedia: The Ultimate Google Resource*. Category: Networking Covers: Wireless Networking User Level: Beginning

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This document provides info. to organizations on the security capabilities of Bluetooth and provide recommendations to organizations employing Bluetooth technologies on securing them effectively. It discusses Bluetooth technologies and security capabilities in technical detail. This document assumes that the readers have at least some operating system, wireless networking, and security knowledge. Because of the constantly changing nature of the wireless security industry and the threats and vulnerabilities to the technologies, readers are strongly encouraged to take advantage of other resources (including those listed in this document) for more current and detailed information. Illustrations.

Business is on the move - mobile computing must keep up! Innovative technology is making the communication between computers a cordless affair. Mobile computing with laptops, hand helds and mobile phones is increasing the demand for reliable and secure wireless networks. Network engineers and consultants need to create and build cutting-edge wireless networks in both the small business and multi-million dollar corporations. Designing Wireless Networks provides the necessary information on how to design and implement a wireless network. Beginning with detailed descriptions of the various implementations and architectures of wireless technologies and moving to the step-by-step instructions on how to install and deploy a fixed wireless network; this book will teach users with no previous wireless networking experience how to design and build their own wireless network based on the best practices of the Enhanced Services from Lucent Technologies. \* Timely coverage of new technologies: Communication without cables is the future of networking \* Advocates wireless networking solutions for any user, regardless of location, device or connection. \* Written by Experts. The authors are leading WAN authorities at Lucent Technologies. \* No previous wireless

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experience is assumed, however, readers should have a basic understanding of networking and TCP/IP protocols

Wireless home networks are better than ever! The emergence of new industry standards has made them easier, more convenient, less expensive to own and operate. Still, you need to know what to look for (and look out for), and the expert guidance you'll find in *Wireless Home Networks For Dummies, 3rd Edition* helps you ensure that your wire-free life is also a hassle-free life! This user-friendly, plain-English guide delivers all of the tips, tricks, and knowledge you need to plan your wireless home network, evaluate and select the equipment that will work best for you, install and configure your wireless network, and much more. You'll find out how to share your Internet connection over your network, as well as files, printers, and other peripherals. And, you'll learn how to avoid the "gotchas" that can creep in when you least expect them. Discover how to: Choose the right networking equipment Install and configure your wireless network Integrate Bluetooth into your network Work with servers, gateways, routers, and switches Connect audiovisual equipment to your wireless network Play wireless, multiuser computer games Establish and maintain your network's security Troubleshoot networking problems Improve network performance Understand 802.11n Whether you're working with Windows PCs, Mac OS X machines, or both *Wireless Home Networking For Dummies, 3rd Edition*, makes it fast and easy to get your wireless network up and running—and keep it that way!

"This book is designed to provide readers with relevant theoretical frameworks and latest technical and institutional solutions for transcoding multimedia in mobile and wireless networks"--Provided by publisher.



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Discusses the process of setting up and using a home or office wireless network, covering topics such as point-to-point networking, sniffer tools, and security.

Smart phones are just the beginning . . . A tech exec's New York Times bestselling, groundbreaking analysis of the impact of mobile intelligence. With the perspective of a historian, the precision of a technologist, and the pragmatism of a CEO, Michael J. Saylor of MicroStrategy provides a panoramic view of the future mobile world. He describes how: A Harvard education will be available to anyone with the touch of a screen. Cash will become virtual software and crime proof. Cars, homes, fruit, animals, and more will be tagged so they can tell you about themselves. Buying an item will be as easy as pointing our mobile device to scan and pay. Land and capital will become more of a liability than an asset. Social mobile media will push all businesses to think and act like software companies. Employment will shift as more service-oriented jobs are automated by mobile software. Products, businesses, industries, economies, and even society will be altered forever as the Mobile wave washes over us and changes the landscape. With so much change, *The Mobile Wave* is a guidebook for individuals, business leaders, and public figures who must navigate the new terrain as mobile intelligence changes everything. "The visionary picture he paints of the future is captivating, informative, and thought-provoking . . . Readers will be able understand and appreciate his clear and engaging exploration of a complex, red-hot, and thoroughly up-to-the minute topic."—USA Today "A thoughtful romp across invention and innovation."—Fortune "A blueprint for impending change and a sober warning for the laggards who resist it."—Forbes.com

This book describes the technologies involved in all aspects of a large networking system and

how the various devices can interact and communicate with each other. Using a bottom up approach the authors demonstrate how it is feasible, for instance, for a cellular device user to communicate, via the all-purpose TCP/IP protocols, with a wireless notebook computer user, traversing all the way through a base station in a cellular wireless network (e.g., GSM, CDMA), a public switched network (PSTN), the Internet, an intranet, a local area network (LAN), and a wireless LAN access point. The information bits, in travelling through this long path, are processed by numerous disparate communication technologies. The authors also describe the technologies involved in infrastructure less wireless networks.

Indoor Wireless Communications: From Theory to Implementation provides an in-depth reference for design engineers, system planners and post graduate students interested in the vastly popular field of indoor wireless communications. It contains wireless applications and services for in-building scenarios and knowledge of key elements in the design and implementation of these systems. Technologies such as Wireless Local Area Networks, Bluetooth, ZigBee, Indoor Optical Communications, WiMAX, UMTS and GSM for indoor environments are fully explained and illustrated with examples. Antennas and propagation issues for in-building scenarios are also discussed, emphasizing models and antenna types specifically developed for indoor communications. An exhaustive survey on indoor wireless communication equipment is also presented, covering all available technologies including antennas, distribution systems, transceivers and base stations.

This book provides an introduction to Bluetooth programming, with a specific focus on developing real code. The authors discuss the major concepts and techniques involved in Bluetooth programming, with special emphasis on how they relate to other networking

technologies. They provide specific descriptions and examples for creating applications in a number of programming languages and environments including Python, C, Java, GNU/Linux, Windows XP, Symbian Series 60, and Mac OS X. No previous experience with Bluetooth is assumed, and the material is suitable for anyone with some programming background. The authors place special emphasis on the essential concepts and techniques of Bluetooth programming, starting simply and allowing the reader to quickly master the basic concepts before addressing advanced features.

This book examines two main topics, namely, Wireless Networking and Mobile Data Management. It is designed around a course the author began teaching to senior undergraduate and master's students at the Department of Computer Science & Engineering of the Indian Institute of Technology Kanpur. The first part of the book, consisting of eight chapters, including the introduction, focuses exclusively on wireless networking aspects. It begins with cellular communication systems, which provided the foundation of wireless networking principles. Three subsequent chapters are devoted to the Global System for Mobile communication (GSM), Wireless Local Area Network (WLAN), Bluetooth, infrared (IR), ZigBee and 6LoWPAN protocols. There is also a chapter on routings in ad hoc networks, an area that is currently being intensively researched due to its potential applications in areas of vehicular network, traffic management, tactical and military systems. Furthermore, the book discusses mobile operating systems and wireless network application level protocols such as Wireless Application Protocols (WAP), Mobile IP and Mosh. The second part highlights mobile data management. It addresses the issues like location management, the importance of replication and caching in mobile environments, the concept of broadcast disk and indexing in air, storage

systems for sharing data in mobile environments, and building smart environments. Given that the design of algorithms is the key to applications in data management; this part begins with a chapter on the type of paradigm shift that has been introduced in the design of algorithms, especially due to asymmetry in mobile environments. Lastly, the closing chapter of the book explores smart environments, showing the readers how wireless technology and mobile data management can be combined to provide optimum comfort for human life. Though the book has been structured as a monograph, it can be used both as a textbook and as a reference material for researchers and developers working in the area.

Explaining how data is transferred over wireless networks, this detailed guide examines the latest in wireless networking technology and vendor-based applications, describes the implementation of new protocols and applications--including WAP and Bluetooth--and explores such wireless features as email, LAN and Web access, and e-commerce. Original.

(Beginner/Intermediate)

Assuming no previous experience of the subject, this user-friendly, step-by-step guide will enable readers to gain an understanding of wireless networking basics.

Having a network in your home increases work efficiency and minimizes confusion. If you want to set up a network in your home but you're not quite sure where to start, then Home Networking for Dummies makes it easy for you to become your household's network administrator. Now fully updated with information on the newest technology in networking available, this quick and to-the-point walkthrough will show you how to install Web connections in your entire home, whether by wires, cables, or WiFi. This resourceful guide illustrates: Planning and installing your network The differences between Ethernet cable, phone lines, and

wireless technology Configuring computer sharing Setting up and managing users Installing, managing, and troubleshooting the network printer Understanding UNC format, mapping drives, and traveling on the network Working with remote files Securing your network from viruses, spyware, and other baddies Along with the basics, this book introduces fun ways to use your network, including sharing music, keeping shopping lists, creating photo albums, setting up a family budget, and instant messaging. It also provides ways to keep your network safe for kids, such as talking to your child about the Internet, creating site filters, and ISP E-mail filtering features. With this trusty guide your home will be fully connected and you'll be working more efficiently in no time!

With Bluetooth Low Energy (BLE), smart devices are about to become even smarter. This practical guide demonstrates how this exciting wireless technology helps developers build mobile apps that share data with external hardware, and how hardware engineers can gain easy and reliable access to mobile operating systems. This book provides a solid, high-level overview of how devices use BLE to communicate with each other. You'll learn useful low-cost tools for developing and testing BLE-enabled mobile apps and embedded firmware and get examples using various development platforms—including iOS and Android for app developers and embedded platforms for product designers and hardware engineers. Understand how data is organized and transferred by BLE devices Explore BLE's concepts, key limitations, and network topology Dig into the protocol stack to grasp how and why BLE operates Learn how BLE devices discover each other and establish secure connections Set up the tools and infrastructure for BLE application development Get examples for connecting BLE to iPhones, iPads, Android devices, and sensors Develop code for a simple device that transmits heart rate

data to a mobile device

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'The WiFi Networking Book: WLAN Standards: IEEE 802.11 bgn, 802.11n, 802.11ac and 802.11ax' starts from the ground up for a new user and does a gradual progression into the technical details around IEEE 802.11 Wireless Lan communications standard. The book details the 'legacy' 802.11 stack (a/b/g) and also goes into the latest wave of 802.11 standards - 802.11n, ac and ax. Introduction A wireless LAN (WLAN) is a data transmission system designed to provide location-independent network access between computing devices by using radio waves rather than a cable infrastructure . In the corporate enterprise, wireless LANs are usually implemented as the final link between the existing wired network and a group of client computers, giving these users wireless access to the full resources and services of the corporate network across a building or campus setting. The widespread acceptance of WLANs depends on industry standardization to ensure product compatibility and reliability among the various manufacturers. The 802.11 specification as a standard for wireless LANS was ratified by the Institute of Electrical and Electronics Engineers (IEEE) in the year 1997. This version of 802.11 provides for 1 Mbps and 2 Mbps data rates and a set of fundamental signaling methods and other services. Like all IEEE 802 standards, the 802.11 standards focus on the bottom two levels the ISO model, the physical layer and link layer. Any LAN application, network operating system, protocol, including TCP/IP and Novell NetWare, will run on an 802.11-compliant WLAN as easily as they run over Ethernet. What is inside Overview on Wireless Technologies, Usage Scenarios and related Taxonomy Wireless LAN and 802.11 WiFi: Architecture, 802.11 Physical Layer, 802.11 Data Link Layer, 802.11 Security 802.11 Standards: 802.11b, 802.11a,

802.11g, 802.11n MIMO, 802.11ac - Wave 1 and Wave 2, 802.11ax WiMax Networks: Forum, WiMax Protocol, WiMax Architecture

Providing a succinct introduction to the field of mobile and wireless communications, this book addresses the social and economic implications of mobile and wireless technologies, such as the effects of the deregulation of telephone systems.

This book provides comprehensive information on Wireless technologies with a deeper focus on Bluetooth and WiFi. The book starts from the ground up but does a quick progression into the technical details. The technology detail is not exhaustive but mostly illustrative to give the reader a ring side view and provide a platform for a more exhaustive exploration. The book is structured as the following: 1. Overview on Wireless Technologies and related taxonomy. 2. Technology architectures of Bluetooth and WiFi 3. Comparative Analysis of Bluetooth and WiFi along with lesser known technologies like HyperLand and HomeRF. 4. Usage scenarios and a market focussed future outlook. 5. [New] Sections on Zigbee and WiMax. "Wireless Technologies: An introduction to Bluetooth and WiFi" is perfect for readers from both technical and non-technical backgrounds getting started on Wireless as it assumes little technical knowhow from its reader. This book is a great pick to use in an introductory class on Wireless Networks and is being used by few universities around the world. It is also a great place to start for marketing and industry focussed readers as the book goes beyond the technology and elaborates a more consumer centric, usage focused detail

of the industry.

This book provides comprehensive coverage of mobile data networking and mobile communications under a single cover for diverse audiences including managers, practicing engineers, and students who need to understand this industry. In the last two decades, many books have been written on the subject of wireless communications and networking. However, mobile data networking and mobile communications were not fully addressed in a unified fashion. This book fills that gap in the literature and is written to provide essentials of wireless communications and wireless networking, including Wireless Personal Area Networks (WPAN), Wireless Local Area Networks (WLAN), and Wireless Wide Area Networks (WWAN). The first ten chapters of the book focus on the fundamentals that are required to study mobile data networking and mobile communications. Numerous solved examples have been included to show applications of theoretical concepts. In addition, unsolved problems are given at the end of each chapter for practice. (A solutions manual will be available.) After introducing fundamental concepts, the book focuses on mobile networking aspects. Four chapters are devoted on the discussion of WPAN, WLAN, WWAN, and internetworking between WLAN and WWAN. Remaining seven chapters deal with other aspects of mobile communications such as mobility management, security, cellular network planning, and 4G systems. A unique feature of this book that is missing in most of the available books on wireless communications and networking is a balance between the theoretical and



practical concepts. Moreover, this book can be used to teach a one/two semester course in mobile data networking and mobile communications to ECE and CS students. \*Details the essentials of Wireless Personal Area Networks(WPAN), Wireless Local Area Networks (WLAN), and Wireless Wide Area Networks (WWAN) \*Comprehensive and up-to-date coverage including the latest in standards and 4G technology \*Suitable for classroom use in senior/first year grad level courses. Solutions manual and other instructor support available

Bluetooth Low Energy (BLE) is an exciting new technology that was introduced in 2010. It targets applications in the Internet of Things (IoT) space. With the recent release of Bluetooth 5 in late 2016 and Bluetooth mesh in mid-2017 (which builds on top of BLE), Bluetooth is now more capable than ever of becoming the standard wireless protocol used in many IoT applications including: smart homes, smart cities, medical devices, wearables, and sensor connectivity. Learning a new technology is always challenging and usually comes with a learning curve. Some technologies are easier to learn than others. Unfortunately, Bluetooth Low Energy (BLE) can be one of those hard ones. The lack of good resources including blogs, tutorials, and up-to-date books that help a beginner to learn BLE, makes the task even more difficult. That is, in fact, the primary goal of this book: to provide you with a complete understanding of the basics and core concepts of BLE that you can learn in a single weekend. Here's a tiny list of the benefits this book will help you achieve: Understand what Bluetooth Low Energy is and how it

compares to Bluetooth Classic. Become better informed about the use cases where BLE makes the most sense. Learn all about Bluetooth 5 and the new features it brought us. Understand how two BLE devices discover and connect with each other.

Understand how BLE devices exchange and transfer data between each other. Fully grasp concepts such as Peripherals, Centrals, Advertising, Connections, GATT, GAP, and many others. Learn about the newly released Bluetooth mesh standard. What readers are saying "I bought your BLE book and I love it. I am an iOS developer and your material helped me understand some of the finer points of BLE" -Alex Carrizo, Senior iOS Developer, iOS SME at Mobile Apps Company Topics include: The basics of Bluetooth Low Energy & Bluetooth 5.0. The difference between BLE and Bluetooth Classic (the one used for streaming audio and connecting headsets). The benefits and limitations of using BLE and which use cases make the most sense for BLE. The difference between a BLE Central and a BLE Peripheral. All about GATT (Generic Attribute Profile) and GAP (Generic Access Profile). How Bluetooth 5 achieves double the speed, four times the range, and eight times the advertising capacity.- How BLE devices advertise and discover each other. How two BLE devices connect to each other. How BLE devices exchange and transfer data between each other. Profiles, Services, and Characteristics. How secure BLE is, and how BLE devices secure the communication channel between them. The different connection and advertising parameters and what each of them means. An introduction to Bluetooth mesh. About

the Author Mohammad Afaneh has been an embedded engineer for over 10 years. Since 2014, he has focused solely on learning and developing Bluetooth Low Energy applications. He even spent days and weeks reading through the 2,800+ page Bluetooth specification document looking for answers to questions he couldn't find answers to in other books and resources. He shares everything he knows about development for BLE technology at his website [www.novelbits.io](http://www.novelbits.io), and via training classes around the world.

As we all know by now, wireless networks offer many advantages over fixed (or wired) networks. Foremost on that list is mobility, since going wireless frees you from the tether of an Ethernet cable at a desk. But that's just the tip of the cable-free iceberg. Wireless networks are also more flexible, faster and easier for you to use, and more affordable to deploy and maintain. The de facto standard for wireless networking is the 802.11 protocol, which includes Wi-Fi (the wireless standard known as 802.11b) and its faster cousin, 802.11g. With easy-to-install 802.11 network hardware available everywhere you turn, the choice seems simple, and many people dive into wireless computing with less thought and planning than they'd give to a wired network. But it's wise to be familiar with both the capabilities and risks associated with the 802.11 protocols. And *802.11 Wireless Networks: The Definitive Guide, 2nd Edition* is the perfect place to start. This updated edition covers everything you'll ever need to know about wireless technology. Designed with the system administrator or serious home

user in mind, it's a no-nonsense guide for setting up 802.11 on Windows and Linux. Among the wide range of topics covered are discussions on: deployment considerations network monitoring and performance tuning wireless security issues how to use and select access points network monitoring essentials wireless card configuration security issues unique to wireless networks With wireless technology, the advantages to its users are indeed plentiful. Companies no longer have to deal with the hassle and expense of wiring buildings, and households with several computers can avoid fights over who's online. And now, with 802.11 Wireless Networks: The Definitive Guide, 2nd Edition, you can integrate wireless technology into your current infrastructure with the utmost confidence.

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