Storage Networking Fundamentals An Introduction To Storage Devices Subsystems Applications Management And File Systems Vol 1

Intelligent readers who want to build their own embedded computer systems-- installed in everything from cell phones to cars to handheld organizers to refrigerators-- will find this book to be the most in-depth, practical, and up-to-date guide on the market. Designing Embedded Hardware carefully steers between the practical and philosophical aspects, so developers can both create their own devices and gadgets and customize and extend off-the-shelf systems. There are hundreds of books to choose from if you need to learn programming, but only a few are available if you want to learn to create hardware. Designing Embedded Hardware provides software and hardware engineers with no prior experience in embedded systems with the necessary conceptual and design building blocks to understand the architectures of embedded systems. Written to provide the depth of coverage and real-world examples developers need, Designing Embedded Hardware also provides a road-map to the pitfalls and traps to avoid in designing embedded systems. Designing Embedded Hardware covers such essential topics as: The principles of developing computer hardware Core hardware designs Assembly language concepts Parallel I/O Analog-digital conversion Timers (internal and external) UART Serial Peripheral Interface Inter-Integrated Circuit Bus Controller Area Network (CAN) Data Converter Interface (DCI) Low-power operation This invaluable and eminently useful book gives you the practical tools and skills to develop, build, and program your own application-specific computers.

HANDS-ON-NETWORKING FUNDAMENTALS, Second Edition, helps readers learn network administration from the ground up. Designed to provide a solid foundation in essential concepts and methods, this detailed introduction requires no previous experience, covering all of the critical knowledge and skills information technology professionals need to work with network operating systems in a network administration environment. Like other textbooks in the Hands-On series, this highly practical guide features a variety of projects in every chapter, with activities integrated closely with core material to facilitate understanding, reinforce learning, and build essential skills at every step. Now thoroughly revised to reflect the latest advances in network technology, HANDS-ON-NETWORKING FUNDAMENTALS,Second Edition includes up-to-date coverage of key network operating systems, wireless and cellular networking, network protocols, and other important innovations in the field. Equally useful for students beginning to explore network administration and professionals preparing for certification, this book is a reliable, effective resource for networking success. Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version.

The #1 bestselling beginner's guide to computer networking—now in a new edition Need networking know-how, but don't know where to turn? Run—don't walk—to the no-nonsense networking guidance offered in this friendly guide! Whether you're a networking administrator or an everyday computer user looking to set up a network in your home or office, Networking For Dummies seamlessly gets you connected with the basics and gives you the knowledge to work out whatever kinks may come your way—in no time. A network can make everything in your home or office run more smoothly and easily, but setting one up can be challenging for even the most computer-savvy people. Well, relax—this bestselling guide has you covered! Inside, you'll find step-by-step instructions on setting up and maintaining a network, working with broadband and wireless technologies, ensuring you're following best practices with storage and back-up procedures, building a wired or wireless network, and much more. Set up a network for all major operating systems Secure, optimize, and troubleshoot your network Create an intranet and use the Cloud safely Make sense of the latest updates to Windows 10 Don't let a thorny networking issue get the best of you! Heed the simple guidance in this friendly guide and effectively network your way to more effective shared data and resources.

Class-tested and coherent, this textbook teaches classical and web information retrieval, including web search and the related areas of text classification and text clustering from basic concepts. It gives an up-to-date treatment of all aspects of the design and implementation of systems for gathering, indexing, and searching documents; methods for evaluating systems; and an introduction to the use of machine learning methods on text collections. All the important ideas are explained using examples and figures, making it perfect for introductory courses in information retrieval for advanced undergraduates and graduate students in computer science. Based on feedback from extensive classroom experience, the book has been carefully structured in order to make teaching more natural and effective. Slides and additional exercises (with solutions for lecturers) are also available through the book's supporting website to help course instructors prepare their lectures.

Microsoft Azure Essentials from Microsoft Press is a series of free ebooks designed to help you advance your technical skills with Microsoft Azure. The first ebook in the series, Microsoft Azure Essentials: Fundamentals of Azure, introduces developers and IT professionals to the wide range of capabilities in Azure. The authors - both Microsoft MVPs in Azure - present both conceptual and how-to content for key areas, including: Azure Websites and Azure Cloud Services Azure Virtual Machines Azure Storage Azure Virtual Networks Databases Azure Active Directory Management tools Business scenarios Watch Microsoft Press’s blog and Twitter (@MicrosoftPress) to learn about other free ebooks in the “Microsoft Azure Essentials” series.

"This book covers a wide spectrum of topics relevant to implementing and managing a modern data center. The chapters are comprehensive and the flow of concepts is easy to understand." -Cisco reviewer Gain a practical knowledge of data center concepts To create a well-designed data center (including storage and network architecture, VoIP implementation, and server consolidation) you must understand a variety of key concepts and technologies. This book explains those factors in a way that smoothes the path to implementation and management. Whether you need an introduction to the technologies, a refresher course for IT managers and data center personnel, or an additional resource for advanced study, you'll find these guidelines and solutions provide a solid foundation for building reliable designs and secure data center policies. * Understand the common causes and high costs of service outages * Learn how to measure high availability and achieve maximum levels * Design a data center using optimum physical, environmental, and technological elements * Explore a modular design for cabling, Points of Distribution, and WAN connections from ISPs * See what must be considered when consolidating data center resources * Expand your knowledge of best practices and security * Create a data center environment that is user- and manager-friendly * Learn how high availability, clustering, and disaster recovery solutions can be deployed to protect critical information *

Find out how to use a single network infrastructure for IP data, voice, and storage
"This book explores the value of information and its management by highlighting theoretical and empirical approaches in the economics of information systems, providing insight into how information systems can generate economic value for businesses and consumers"--Provided by publisher.
Network Fundamentals, CCNA Exploration Companion Guide is the official supplemental textbook for the Network Fundamentals course in the Cisco® Networking Academy® CCNA® Exploration curriculum version 4. The course, the first of four in the new curriculum, is based on a top-down approach to networking. The Companion Guide, written and edited by Networking Academy instructors, is designed as a portable desk reference to use anytime, anywhere. The book's features reinforce the material in the course to help you focus on important concepts and organize your study time for exams. New and improved features help you study and succeed in this course: Chapter objectives–Review core concepts by answering the focus questions listed at the beginning of each chapter. Key terms–Refer to the updated lists of networking vocabulary introduced and highlighted in context in each chapter. Glossary–Consult the comprehensive glossary with more than 250 terms. Check Your Understanding questions and answer key–Evaluate your readiness with the updated end-of-chapter questions that match the style of questions you see on the online course quizzes. The answer key explains each answer. Challenge questions and activities–Strive to ace more challenging review questions and activities designed to prepare you for the complex styles of questions you might see on the CCNA exam. The answer key explains each answer. How To–Look for this icon to study the steps you need to learn to perform certain tasks. Packet Tracer Activities– Explore networking concepts in activities interspersed throughout some chapters using Packet Tracer v4.1 developed by Cisco. The files for these activities are on the accompanying CD-ROM. Also available for the Network Fundamentals Course Network Fundamentals, CCNA Exploration Labs and Study Guide ISBN-10: 1-58713-203-6 ISBN-13: 978-1-58713-203-2 Companion CD-ROM **See instructions within the ebook on how to get access to the files from the CD-ROM that accompanies this print book.** The CD-ROM provides many useful tools and information to support your education: Packet Tracer Activity exercise files v4.1 VLSM Subnetting Chart Structured Cabling Exploration Supplement Taking Notes: a .txt file of the chapter objectives A Guide to Using a Networker's Journal booklet IT Career Information Tips on Lifelong Learning in Networking This book is part of the Cisco Networking Academy Series from Cisco Press®. The products in this series support and complement the Cisco Networking Academy online curriculum.
Become well-versed with basic networking concepts such as routing, switching, and subnetting, and prepare for the Microsoft 98-366 exam Key Features Build a strong foundation in networking concepts Explore both the hardware and software aspects of networking Prepare by taking mock tests with up-to-date exam questions Book Description A network is a collection of computers, servers, mobile devices, or other computing devices connected for sharing data. This book will help you become well versed in basic networking concepts and prepare to pass Microsoft's MTA Networking Fundamentals Exam 98-366. Following Microsoft's official syllabus, the book starts by covering network infrastructures to help you differentiate intranets, internets, and extranets, and learn about network topologies. You'll then get up to date with common network hardware devices such as routers and switches and the media types used to connect them together. As you advance, the book will take you through different protocols and services and the requirements to follow a standardized approach to networking. You'll get to grips with the OSI and TCP/IP models as well as IPv4 and IPv6. The book also shows you how to recall IP addresses through name resolution. Finally, you'll be able to practice everything you've learned and take the exam confidently with the help of mock tests. By the end of this networking book, you'll have developed a strong foundation in the essential networking concepts needed to pass Exam 98-366. What you will learn Things you will learn: Become well versed in networking topologies and concepts Understand network infrastructures such as intranets, extranets, and more Explore network switches, routers, and other network hardware devices Get to grips with different network protocols and models such as OSI and TCP/IP Work with a variety of network services such as DHCP, NAT, firewalls, and remote access Apply networking concepts in different real-world scenarios Who this book is for If you're new to the IT industry or simply want to gain a thorough understanding of networking, this book is for you. A basic understanding of the Windows operating system and your network environment will be helpful.
Appropriate for a first course on computer networking, this textbook describes the architecture and function of the application, transport, network, and link layers of the internet protocol stack, then examines audio and video networking applications, the underpinnings of encryption and network security, and the key issues of network management. Th
The inside scoop on a leading-edge data storage technology The rapid growth of e-commerce and the need to have all kinds ofapplications operating at top speed at the same time, all on a 24/7basis while connected to the Internet, is overwhelming traditionaldata storage methods. The solution? Storage Area Networks(SANs)--the data communications technology that's expected torevolutionize distributed computing. Written by top technologyexperts at VERITAS Software Global Corporation, this book takesreaders through all facets of storage networking, explaining how aSAN can help consolidate conventional server storage onto networks,how it makes applications highly available no matter how much datais being stored, and how this in turn makes data access andmanagement faster and easier. System and network managersconsidering storage networking for their enterprises, as well asapplication developers and IT staff, will find invaluable advice onthe design and deployment of the technology and how it works.Detailed, up-to-date coverage includes: The evolution of the technology and what is expected fromSANs Killer applications for SANs Full coverage of storage networking and what it means for theenterprise's information processing architecture Individual chapters devoted to the storage, network, andsoftware components of storage networking Issues for implementation and adoption
This complete guide to setting up and running a TCP/IP network is essential for network administrators, and invaluable for users of home systems that access the Internet. The book starts with the fundamentals -- what protocols do and how they work, how addresses and routing are used to move data through the network, how to set up your network connection -- and then covers, in detail, everything you need to know to exchange information via the Internet.Included are discussions on advanced routing protocols (RIPv2, OSPF, and BGP) and the gated software package that implements them, a tutorial on configuring important network services -- including DNS, Apache, sendmail, Samba, PPP, and DHCP -- as well as expanded chapters on troubleshooting and security. TCP/IP Network Administration is also a command and syntax reference for important packages such as gated, pppd, named, dhcpd, and sendmail.With coverage that includes Linux, Solaris, BSD, and System V TCP/IP implementations, the third edition contains: Overview of TCP/IP Delivering the data Network services Getting startedM Basic configuration Configuring the interface Configuring routing Configuring DNS Configuring network servers Configuring sendmail Configuring Apache Network security Troubleshooting Appendices include dip, ppd, and chat reference, a gated reference, a dhcpd reference, and a sendmail reference This new edition includes ways of configuring Samba to provide file and print sharing on networks that integrate Unix and Windows, and a new chapter is dedicated to the important task of configuring the Apache web server. Coverage of network security now includes details on OpenSSH, stunnel, gpg, iptables, and the access control mechanism in xinetd. Plus, the book offers updated information about DNS, including details on BIND 8 and BIND 9, the role of classless IP addressing and network prefixes, and the changing role of registrars.Without a doubt, TCP/IP Network Administration, 3rd Edition is a must-have for all network administrators and anyone who deals with a network that transmits data over the Internet.

From Charles M. Kozierok, the creator of the highly regarded www.pcguide.com, comes The TCP/IP Guide. This completely up-to-date, encyclopedic reference on the TCP/IP protocol suite will appeal to newcomers and the seasoned professional alike. Kozierok details the core protocols that make TCP/IP internetworks function and the most important classic TCP/IP applications, integrating IPv6 coverage throughout. Over 350 illustrations and hundreds of tables help to explain the finer points of this complex topic. The book's personal, user-friendly writing style lets readers of all levels understand the dozens of protocols and technologies that run the Internet, with full coverage of PPP, ARP, IP, IPv6, IP NAT, IPSec, Mobile IP, ICMP, RIP, BGP, TCP, UDP, DNS, DHCP, SNMP, FTP, SMTP, NNTP, HTTP, Telnet, and much more. The TCP/IP Guide is a must-have addition to the libraries of internetworking students, educators, networking professionals, and those working toward certification.

When it comes to choosing, using, and maintaining a database, understanding its internals is essential. But with so many distributed databases and tools available today, it's often difficult to understand what each one offers and how they differ. With this practical guide, Alex Petrov guides developers through the concepts behind modern database and storage engine internals. Throughout the book, you'll explore relevant material gleaned from numerous books, papers, blog posts, and the source code of several open source databases. These resources are listed at the end of parts one and two. You'll discover that the most significant distinctions among many modern databases reside in subsystems that determine how storage is organized and how data is distributed. This book examines: Storage engines: Explore storage classification and taxonomy, and dive into B-Tree-based and immutable Log Structured storage engines, with differences and use-cases for each Storage building blocks: Learn how database files are organized to build efficient storage, using auxiliary data structures such as Page Cache, Buffer Pool and Write-Ahead Log Distributed systems: Learn step-by-step how nodes and processes connect and build complex communication patterns Database clusters: Which consistency models are commonly used by modern databases and how distributed storage systems achieve consistency

Today's networks are required to support an increasing array of real-time communication methods. Video chat, real-time messaging, and always-connected resources put demands on networks that were previously unimagined. The Second Edition of Fundamentals of Communications and Networking helps readers better understand today's networks and the way they support the evolving requirements of different types of organizations. It discusses the critical issues of designing a network that will meet an organization's performance needs and discusses how businesses use networks to solve business problems. Using numerous examples and exercises, this text incorporates hands-on activities to prepare readers to fully understand and design modern networks and their requirements. Key Features of the Second Edition: - Introduces network basics by describing how networks work - Discusses how networks support the increasing demands of advanced communications - Illustrates how to map the right technology to an organization's needs and business goals - Outlines how businesses use networks to solve business problems, both technically and operationally.

A comparative analysis of Ethernet, TCP/IP, and Fibre Channel in the context of SCSI Introduces network administrators to the requirements of storage protocols Explains the operation of network protocols to storage administrators Compares and contrasts the functionality of Ethernet, TCP/IP, and Fibre Channel Documents the details of the major protocol suites, explains how they operate, and identifies common misunderstandings References the original standards and specifications so you can get a complete understanding of each protocol Helps you understand the implications of network design choices Discusses advanced network functionality such as QoS, security, management, and protocol analysis Corporations increasingly depend on computer and communication technologies to remain competitive in the global economy. Customer relationship management, enterprise resource planning, and e-mail are a few of the many applications that generate new data every day. Effectively storing, managing, and accessing that data is a primary business challenge in the information age. Storage networking is a crucial component of the solution to meet that challenge. Written for both storage administrators who need to learn more about networking and network administrators who need to learn more about storage, Storage Networking Protocol Fundamentals is a concise introduction to storage networking protocols. The book picks up where Storage Networking Fundamentals left off by focusing on the networking protocols that underlie modern open systems: block-oriented storage networks. The first part of the book introduces you to the field of storage networking and the Open Systems Interconnection (OSI) reference model. The second part compares networked storage technologies, including iSCSI (Small Computer Systems Interface over IP) and Fibre Channel. It also examines in detail each of the major protocol suites layer-by-layer within the OSI reference model. The third part discusses advanced functionalities of these technologies, such as quality of service (QoS), load-balancing functions, security, management, and protocol analysis. You can read this book cover to cover or use it as a reference, directly accessing the particular topics of interest to you. "Storage networking is a critical concept for today's businesses, and this book provides a unique and helpful way to better understand it. Storage networking is also continuously evolving, and as such this book may be seen as an introduction to the information technology infrastructures of the future." —from the foreword by Claudio DeSanti, vice-chairman of the ANSI INCITS T11 Technical Committee

The main goal of bringing out this book is to make available To The students a book that contains the subject matter that they need to know. All the concepts are explained in a simple and lucid style and in a compact way. This book begins with an introduction to computer networks, and then necessary aspects of signals are presented. Then all the layers of the OSI and TCP reference models are well explained in depth with necessary diagrams. Other important aspects like "Network Security, WWW, Multimedia, Data Compression", are also covered. Salient features: * Sections are divided thoughtfully keeping the interest and aptitude of the students. * Each chapter ends with a set of questions for students to answer. * Examinations Question Papers are also included at the end of book.

Despite the buzz surrounding the cloud computing, only a small percentage of organizations have actually deployed this new style of IT—so far. If you're planning your long-term cloud strategy, this practical book provides insider knowledge and actionable real-world lessons regarding planning, design, operations, security, and application transformation. This book teaches business and technology managers how to transition their organization's traditional IT to cloud computing. Rather than yet another book trying to sell or convince readers on the benefits of clouds, this book provides guidance, lessons learned, and best practices on how to design, deploy, operate, and secure an enterprise cloud based on real-world experience. Author James Bond provides useful guidance and best-practice checklists based on his field experience with real customers and cloud providers. You'll view cloud services from the perspective of a consumer and as an owner/operator of an enterprise private or hybrid cloud, and learn valuable lessons from successful and less-than-successful organization use-case scenarios. This is the information every CIO needs in order to make the business and technical decisions to finally execute on their journey to cloud computing. Get updated trends and definitions in cloud computing, deployment models, and for building or buying cloud services Discover challenges in cloud operations and management not foreseen by early adopters Use real-world lessons to plan and build an enterprise private or hybrid cloud Learn how to assess, port, and migrate legacy applications to the cloud Identify security threats and vulnerabilities unique to the cloud Employ a cloud management system for your enterprise

(private or multi-provider hybrid) cloud ecosystem Understand the challenges for becoming an IT service broker leveraging the power of the cloud
Unlike networking technology, where there is already a great deal of literature available, many professionals still need to understand the basic building blocks of storage networking. This book provides vendor-neutral, independent analysis and terminology.
The amount of data being generated, processed, and stored has reached unprecedented levels. Even during the recent economic crisis, there has been no slow down or information recession. Instead, the need to process, move, and store data has only increased. Consequently, IT organizations are looking to do more with what they have while supporting gr
Data Center Virtualization Fundamentals For many IT organizations, today"s greatest challenge is to drive more value, efficiency, and utilization from data centers. Virtualization is the best way to meet this challenge. Data Center Virtualization Fundamentals brings together the comprehensive knowledge Cisco professionals need to apply virtualization throughout their data center environments. Leading data center expert Gustavo A. A. Santana thoroughly explores all components of an end-to-end data center virtualization solution, including networking, storage, servers, operating systems, application optimization, and security. Rather than focusing on a single product or technology, he explores product capabilities as interoperable design tools that can be combined and integrated with other solutions, including VMware vSphere. With the author"s guidance, you"ll learn how to define and implement highly-efficient architectures for new, expanded, or retrofit data center projects. By doing so, you can deliver agile application provisioning without purchasing unnecessary infrastructure, and establish a strong foundation for new cloud computing and IT-as-a-service initiatives. Throughout, Santana illuminates key theoretical concepts through realistic use cases, real-world designs, illustrative configuration examples, and verification outputs. Appendixes provide valuable reference information, including relevant Cisco data center products and CLI principles for IOS and NX-OS. With this approach, Data Center Virtualization Fundamentals will be an indispensable resource for anyone preparing for the CCNA Data Center, CCNP Data Center, or CCIE Data Center certification exams. Gustavo A. A. Santana, CCIE No. 8806, is a Cisco Technical Solutions Architect working in enterprise and service provider data center projects that require deep integration across technology areas such as networking, application optimization, storage, and servers. He has more than 15 years of data center experience, and has led and coordinated a team of specialized Cisco engineers in Brazil. He holds two CCIE certifications (Routing & Switching and Storage Networking), and is a VMware Certified Professional (VCP) and SNIA Certified Storage Networking Expert (SCSN-E). A frequent speaker at Cisco and data center industry events, he blogs on data center virtualization at gustavoaasantana.net. Learn how virtualization can transform and improve traditional data center network topologies Understand the key characteristics and value of each data center virtualization technology Walk through key decisions, and transform choices into architecture Smoothly migrate existing data centers toward greater virtualization Burst silos that have traditionally made data centers inefficient Master foundational technologies such as VLANs, VRF, and virtual contexts Use virtual PortChannel and FabricPath to overcome the limits of STP Optimize cabling and network management with fabric extender (FEX) virtualized chassis Extend Layer 2 domains to distant data center sites using MPLS and Overlay Transport Virtualization (OTV) Use VSANs to overcome Fibre Channel fabric challenges Improve SAN data protection, environment isolation, and scalability Consolidate I/O through Data Center Bridging and FCoE Use virtualization to radically simplify server environments Create server profiles that streamline "bare metal" server provisioning "Transcend the rack" through virtualized networking based on Nexus 1000V and VM-FEX Leverage opportunities to deploy virtual network services more efficiently Evolve data center virtualization toward full-fledged private clouds -Reviews - "The variety of material that Gustavo covers in this work would appeal to anyone responsible for Data Centers today. His grasp of virtualization technologies and ability to relate it in both technical and non-technical terms makes for compelling reading. This is not your ordinary tech manual. Through use of relatable visual cues, Gustavo provides information that is easily recalled on the subject of virtualization, reaching across Subject Matter Expertise domains. Whether you consider yourself well-versed or a novice on the topic, working in large or small environments, this work will provide a clear understanding of the diverse subject of virtualization." -- Bill Dufresne, CCIE 4375, Distinguished Systems Engineer, Cisco (Americas) "..this book is an essential reference and will be valuable asset for potential candidates pursuing their Cisco Data Center certifications. I am confident that in reading this book, individuals will inevitably gain extensive knowledge and hands-on experience during their certification preparations. If you"re looking for a truly comprehensive guide to virtualization, this is the one!" -- Yusuf Bhaiji, Senior Manager, Expert Certifications (CCIE, CCDE, CCAr), Learning@Cisco "When one first looks at those classic Cisco Data Center blueprints, it is very common to become distracted with the overwhelming number of pieces and linkages. By creating a solid theoretical foundation and providing rich sets of companion examples to illustrate each concept, Gustavo"s book brings hope back to IT Professionals from different areas of expertise. Apparently complex topics are demystified and the insertion of products, mechanisms, protocols and technologies in the overall Data Center Architecture is clearly explained, thus enabling you to achieve robust designs and successful deployments. A must read... Definitely!" -- Alexandre M. S. P. Moraes, Consulting Systems Engineer -- Author of "Cisco Firewalls"
The superabundance of data that is created by today's businesses is making storage a strategic investment priority for companies of all sizes. As storage takes precedence, the following major initiatives emerge: Flatten and converge your network: IBM® takes an open, standards-based approach to implement the latest advances in the flat, converged data center network designs of today. IBM Storage solutions enable clients to deploy a high-speed, low-latency Unified Fabric Architecture. Optimize and automate virtualization: Advanced virtualization awareness reduces the cost and complexity of deploying physical and virtual data center infrastructure. Simplify management: IBM data center networks

are easy to deploy, maintain, scale, and virtualize, delivering the foundation of consolidated operations for dynamic infrastructure management. Storage is no longer an afterthought. Too much is at stake. Companies are searching for more ways to efficiently manage expanding volumes of data, and to make that data accessible throughout the enterprise. This demand is propelling the move of storage into the network. Also, the increasing complexity of managing large numbers of storage devices and vast amounts of data is driving greater business value into software and services. With current estimates of the amount of data to be managed and made available increasing at 60% each year, this outlook is where a storage area network (SAN) enters the arena. SANs are the leading storage infrastructure for the global economy of today. SANs offer simplified storage management, scalability, flexibility, and availability; and improved data access, movement, and backup. Welcome to the cognitive era. The smarter data center with the improved economics of IT can be achieved by connecting servers and storage with a high-speed and intelligent network fabric. A smarter data center that hosts IBM Storage solutions can provide an environment that is smarter, faster, greener, open, and easy to manage. This IBM® Redbooks® publication provides an introduction to SAN and Ethernet networking, and how these networks help to achieve a smarter data center. This book is intended for people who are not very familiar with IT, or who are just starting out in the IT world.

The perimeter defenses guarding your network perhaps are not as secure as you think. Hosts behind the firewall have no defenses of their own, so when a host in the "trusted" zone is breached, access to your data center is not far behind. That’s an all-too-familiar scenario today. With this practical book, you’ll learn the principles behind zero trust architecture, along with details necessary to implement it. The Zero Trust Model treats all hosts as if they’re internet-facing, and considers the entire network to be compromised and hostile. By taking this approach, you’ll focus on building strong authentication, authorization, and encryption throughout, while providing compartmentalized access and better operational agility. Understand how perimeter-based defenses have evolved to become the broken model we use today Explore two case studies of zero trust in production networks on the client side (Google) and on the server side (PagerDuty) Get example configuration for open source tools that you can use to build a zero trust network Learn how to migrate from a perimeter-based network to a zero trust network in production

Do you want to find out how a computer network works? Do you want to understand what it all takes to keep a home or office network up and running? This book is all you need! It will help you navigate your way to becoming proficient with network fundamentals and technology. When the first computers were built during the Second World War, they were expensive and isolated. However, after about twenty years, as their prices gradually decreased, the first experiments began to connect computers together. At the time, sharing them over a long distance was an interesting idea. Computers and the Internet have changed this world and our lifestyle forever. We just need to touch a small button and within a fraction of a second, we can make a call, send a file or video message. The major factor that lies behind this advanced technology is none other than computer network. That's why it's important to know how it works! Networking for Beginners covers the following topics: Networking Basics - This chapter considers the needs of a real beginner in computer networking and covers the following crucial topics: definition of computer networking, types of computer networks, network topologies, and network architecture. Network Hardware - A comprehensive discussion on different network components that include routers, hubs, switches, etc. Network Cabling - This chapter discusses the different cabling standards include coaxial, fiber optic cable and twisted-pair copper cable. Wireless Networking - Fundamental technicalities of wireless technology that is of great significance to the entire computer networking discipline. This chapter offers important information on how to enjoy the benefits of Wi-Fi technology and how to set up and configure a computer for wireless connectivity. IP Addressing - This chapter pays great attention to the basics of IP addressing, and the different number systems (binary, decimal, and hexadecimal) IP Subnetting - Introduction to concepts of subnetting. Network Protocols - Various protocols of the TCP/IP suite. Internet Essentials - Different terminologies regarding the Internet, the worldwide web, and history of the Internet. Virtualization in cloud computing - Concept of virtualization, its relevance in computer networking, and an examination of cloud services. Network Troubleshooting - This chapter considers troubleshooting as a top management function. NETWORKING FOR BEGINNERS is an easy-to-read book for anyone hungry for computer networking knowledge. The language used is simple, and even the very technical terms that pop from time to time have been explained in a way that is easy to understand.

This book provides an introduction to digital storage for consumer electronics. It discusses the various types of digital storage, including emerging non-volatile solid-state storage technologies and their advantages and disadvantages. It discusses the best practices for selecting, integrating, and using storage devices for various applications. It explores the networking of devices into an overall organization that results in always-available home storage combined with digital storage in the cloud to create an infrastructure to support emerging consumer applications and the Internet of Things. It also looks at the role of digital storage devices in creating security and privacy in consumer products.

Storage Networking FundamentalsAn Introduction to Storage Devices, Subsystems, Applications, Management, and Filing SystemsCisco Press

Provide a variety of lab experiences to supplement the text. Contains 101 hands-on activities and are organized by related textbook chapters.

This book demystifies the amazing architecture and protocols of computers as they communicate over the Internet. While very complex, the Internet operates on a few relatively simple concepts that anyone can understand. Networks and networked applications are embedded in our lives. Understanding how these technologies work is invaluable. This book was written for everyone - no technical knowledge is required!While this book is not specifically about the Network+ or CCNA certifications, it as a way to give students interested in these certifications a starting point.

Cloud computing-accessing computing resources over the Internet-is rapidly changing the landscape of information technology. Its primary benefits compared to on-premise computing models are reduced costs and increased agility and scalability. Hence, cloud computing is receiving considerable interest among several stakeholders-businesses, the IT ind

On computer networks

Annotation Enter the new era of data storage that combines database and networking technologies with this introductory comparison and practical implementation of Storage Area Networks. Multiple vendor

reference: This book provides solutions and schemes from competing SAN vendors, including an appendix of available SAN products. Readers will learn to customize their own SAN solution: Authors forecast future growth of SANs in an Advanced Study of Virtual Interface. Technically accurate instruction: NIIT recently earned the National Education and Training group Excellence Award for defect-free deliveries of Learning products. Even highly experienced system or network professionals are unfamiliar with SAN functionality and terminology. This book opens with an overview of the need for data storage in an enterprise environment, the different types of data storage devices, and existing data storage techniques. The authors build on that foundation with an exploration of the evolution of SAN, the various networking models and data-centric applications, a chapter dedicated to fiber channel, and practical solutions for centralized, heterogeneous, and high-speed data storage challenges. The second half of this book delves into more practical applications of the SAN: designing, implementing, managing, and troubleshooting a SAN. The last chapter explores how SAN fits into the current Web scenario, and VI Architecture as a new system of cluster communications. Unlike competing titles, this book provides solutions for alternative SAN vendors, comparing SAN schemes for competitive products. NIIT is a global eBusiness IT Solutions Corporation that has provided over 650 Educational Multimedia Software titles and more than 10,000 hours of instructor-led training during its 16 years of training delivery. Judged the Best Training Company through an opinion poll among over 1000 CIOs, software professionals, and IT users by ComputerWorld magazine, NIIT provides classroom-based training, technology-based training, and Internet-based training.

Today, billions of devices are Internet-connected, IoT standards and protocols are stabilizing, and technical professionals must increasingly solve real problems with IoT technologies. Now, five leading Cisco IoT experts present the first comprehensive, practical reference for making IoT work. IoT Fundamentals brings together knowledge previously available only in white papers, standards documents, and other hard-to-find sources—or nowhere at all. The authors begin with a high-level overview of IoT and introduce key concepts needed to successfully design IoT solutions. Next, they walk through each key technology, protocol, and technical building block that combine into complete IoT solutions. Building on these essentials, they present several detailed use cases, including manufacturing, energy, utilities, smart+connected cities, transportation, mining, and public safety. Whatever your role or existing infrastructure, you'll gain deep insight what IoT applications can do, and what it takes to deliver them. Fully covers the principles and components of next-generation wireless networks built with Cisco IOT solutions such as IEEE 802.11 (Wi-Fi), IEEE 802.15.4-2015 (Mesh), and LoRaWAN Brings together real-world tips, insights, and best practices for designing and implementing next-generation wireless networks Presents start-to-finish configuration examples for common deployment scenarios Reflects the extensive first-hand experience of Cisco experts

This IBM® Redbooks® publication is based on the book Introduction to the New Mainframe: z/OS Basics, SG24-6366, which was produced by the International Technical Support Organization (ITSO), Poughkeepsie Center. It provides students of information systems technology with the background knowledge and skills necessary to begin using the basic facilities of a mainframe computer. For optimal learning, students are assumed to have successfully completed an introductory course in computer system concepts, such as computer organization and architecture, operating systems, data management, or data communications. They should also have successfully completed courses in one or more programming languages, and be PC literate. This textbook can also be used as a prerequisite for courses in advanced topics, or for internships and special studies. It is not intended to be a complete text covering all aspects of mainframe operation. It is also not a reference book that discusses every feature and option of the mainframe facilities. Others who can benefit from this course include experienced data processing professionals who have worked with non-mainframe platforms, or who are familiar with some aspects of the mainframe but want to become knowledgeable with other facilities and benefits of the mainframe environment. As we go through this course, we suggest that the instructor alternate between text, lecture, discussions, and hands-on exercises. Many of the exercises are cumulative, and are designed to show the student how to design and implement the topic presented. The instructor-led discussions and hands-on exercises are an integral part of the course, and can include topics not covered in this textbook. In this course, we use simplified examples and focus mainly on basic system functions. Hands-on exercises are provided throughout the course to help students explore the mainframe style of computing. At the end of this course, you will be familiar with the following information: Basic concepts of the mainframe, including its usage and architecture Fundamentals of IBM z/VSE® (VSE), an IBM zTM Systems entry mainframe operating system (OS) An understanding of mainframe workloads and the major middleware applications in use on mainframes today The basis for subsequent course work in more advanced, specialized areas of z/VSE, such as system administration or application programming

This book introduces fundamentals and trade-offs of data de-duplication techniques. It describes novel emerging de-duplication techniques that remove duplicate data both in storage and network in an efficient and effective manner. It explains places where duplicate data are originated, and provides solutions that remove the duplicate data. It classifies existing de-duplication techniques depending on size of unit data to be compared, the place of de-duplication, and the time of de-duplication. Chapter 3 considers redundancies in email servers and a de-duplication technique to increase reduction performance with low overhead by switching chunk-based de-duplication and file-based de-duplication. Chapter 4 develops a de-duplication technique applied for cloud-storage service where unit data to be compared are not physical-format but logical structured-format, reducing processing time efficiently. Chapter 5 displays a network de-duplication where redundant data packets sent by clients are encoded (shrunk to small-sized payload) and decoded (restored to original size payload) in routers or switches on the way to remote servers through network. Chapter 6 introduces a mobile de-duplication technique with image (JPEG) or video (MPEG) considering performance and overhead of encryption algorithm for security on mobile device.

A guide to planning, implementing, managing, and using storage area networks to increase the efficiency of your network infrastructure Gain in-depth coverage of SAN fundamentals, topologies, implementation and management techniques, and products Build and sharpen your troubleshooting skills for data-mining, online transaction processing, imaging, data warehousing, and other highly data-intensive applications Understand how to implement the Fibre Channel and iSCSI protocols, which are key to any SAN solution Learn current industry implementation and application standards, as well as future advances During the last decade, a multitude of changes in computing

technology and the globalization of business through the Internet have resulted in a tremendous growth in storage requirements. This has forced many organizations around the world to reassess the way they view their storage environment. Many applications, such as e-commerce, imaging, data warehousing, Enterprise Resource Planning (ERP), and Customer Relationship Management (CRM), fill storage media quickly. Data accessibility and availability for these applications has to be fast and efficient. Clearly, the ever-increasing information access requirements have had a profound effect on most data centers. As a result, many organizations are searching for cost-effective ways to ensure high data availability and reliability. Storage Area Network Fundamentals presents the benefits of storage area networks (SANs) to corporate users and enables them to deploy SAN technology effectively. Designed as an introduction to SANs, Storage Area Network Fundamentals develops an understanding of SAN basics and shows how to plan, implement, and manage a SAN. This book covers the topologies, protocols, and products required to implement and manage efficient SANs.

This book provides you with an accessible overview of network management covering management not just of networks themselves but also of services running over those networks. It also explains the different technologies that are used in network management and how they relate to each other.--[book cover].

Demonstrates two fundamental components of distributed computing in a UNIX environment--the Network File System and the Network Information System--explaining how to plan, set up, protect, and debug UNIX networks.

Master the basics of data centers to build server farms that enhance your Web site performance Learn design guidelines that show how to deploy server farms in highly available and scalable environments Plan site performance capacity with discussions of server farm architectures and their real-life applications to determine your system needs Today's market demands that businesses have an Internet presence through which they can perform e-commerce and customer support, and establish a presence that can attract and increase their customer base. Underestimated hit ratios, compromised credit card records, perceived slow Web site access, or the infamous "Object Not Found" alerts make the difference between a successful online presence and one that is bound to fail. These challenges can be solved in part with the use of data center technology. Data centers switch traffic based on information at the Network, Transport, or Application layers. Content switches perform the "best server" selection process to direct users' requests for a specific service to a server in a server farm. The best server selection process takes into account both server load and availability, and the existence and consistency of the requested content. Data Center Fundamentals helps you understand the basic concepts behind the design and scaling of server farms using data center and content switching technologies. It addresses the principles and concepts needed to take on the most common challenges encountered during planning, implementing, and managing Internet and intranet IP-based server farms. An in-depth analysis of the data center technology with real-life scenarios make Data Center Fundamentals an ideal reference for understanding, planning, and designing Web hosting and e-commerce environments.

If a network is not secure, how valuable is it? Introduction to Computer Networks and Cybersecurity takes an integrated approach to networking and cybersecurity, highlighting the interconnections so that you quickly understand the complex design issues in modern networks. This full-color book uses a wealth of examples and illustrations to effective