

## Cisco Prime Infrastructure

This IBM® Redbooks® publication is an IBM and Cisco collaboration that articulates how IBM and Cisco can bring the benefits of their respective companies to the modern data center. It documents the architectures, solutions, and benefits that can be achieved by implementing a data center based on IBM server, storage, and integrated systems, with the broader Cisco network. We describe how to design a state-of-the-art data center and networking infrastructure combining Cisco and IBM solutions. The objective is to provide a reference guide for customers looking to build an infrastructure that is optimized for virtualization, is highly available, is interoperable, and is efficient in terms of power and space consumption. It will explain the technologies used to build the infrastructure, provide use cases, and give guidance on deployments.

This is Cisco's official, comprehensive self-study resource for both wireless exams associated with the new Cisco Certified Network Professional (CCNP) Enterprise certification: Designing Cisco Enterprise Wireless Networks (ENWLSD 300-425) and Implementing Cisco Enterprise Wireless Networks (ENWLSI 300-430). It brings together all the conceptual and practical knowledge needed to design, survey, implement, maintain and troubleshoot modern Cisco wireless networks. Designed to help you study, prepare for, and pass the CCNP Enterprise ENWLSD 300-425 (design) and ENWLSI 300-430 300-420 ENSLD exams on your first attempt, this guide covers every exam objective concisely and logically, with extensive teaching features designed to promote retention and understanding. You'll find: Pre-chapter quizzes to assess knowledge upfront and focus your study more efficiently Foundation topics sections that explain concepts and configurations, and link theory to practice Key topics sections calling attention to every figure, table, and list you must know Exam Preparation sections with additional chapter review features Final preparation chapter providing tools and a complete final study plan A customizable practice test library, including access to sample exams offering realistic practice delivered through Pearson's state-of-the-art test prep test engine CCNP Enterprise Wireless Design and Implementation ENWLSD 300-425 and ENWLSI 300-430 Official Cert Guide offers comprehensive, up-to-date coverage of all topics related to: Designing Cisco Enterprise Wireless Networks (ENWLSD): Site surveys Wired and wireless infrastructure Mobility WLAN high availability Implementing Cisco Enterprise Wireless Networks (ENWLSI): FlexConnect QoS Multicast Advanced location services Security for client connectivity Monitoring Device hardening

Trust the best-selling Official Cert Guide series from Cisco Press to help you learn, prepare, and practice for exam success. They are built with the objective of providing assessment, review, and practice to help ensure you are fully prepared for your certification exam. Master Cisco CCNA Wireless 640-722 exam topics Assess your knowledge with chapter-opening quizzes Review key concepts with exam preparation tasks This is the eBook edition of the CCNA Wireless 640-722 Official Certification Guide. This eBook does not include the companion CD-ROM with practice exam that comes with the print edition. CCNA Wireless 640-722 Official Certification Guide presents you with an organized test preparation routine through the use of proven series elements and techniques. "Do I Know This Already?" quizzes open each chapter and enable you to decide how much time you need to spend on each section.

Exam topic lists make referencing easy. Chapter-ending Exam Preparation Tasks help you drill on key concepts you must know thoroughly. CCNA Wireless 640-722 Official Certification Guide focuses specifically on the objectives for the Cisco CCNA Wireless 640-722 exam. Expert network architect David Hucaby (CCIE No. 4594) shares preparation hints and test-taking tips, helping you identify areas of weakness and improve both your conceptual knowledge and hands-on skills. Material is presented in a concise manner, focusing on increasing your understanding and retention of exam topics. Well regarded for its level of detail, assessment features, comprehensive design scenarios, and challenging review questions and exercises, this official study guide helps you master the concepts and techniques that will enable you to succeed on the exam the first time. The official study guide helps you master all the topics on the CCNA Wireless 640-722 exam, including the following: RF signals, modulation, and standards Antennas WLAN topologies, configuration, and troubleshooting Wireless APs CUWN architecture Controller configuration, discovery, and maintenance Roaming Client configuration RRM Wireless security Guest networks WCS network management Interference CCNA Wireless 640-722 Official Certification Guide is part of a recommended learning path from Cisco that includes simulation and hands-on training from authorized Cisco Learning Partners and self-study products from Cisco Press. To find out more about instructor-led training, e-learning, and hands-on instruction offered by authorized Cisco Learning Partners worldwide, please visit [www.cisco.com/go/authorizedtraining](http://www.cisco.com/go/authorizedtraining).

This book is a concise one-stop desk reference and synopsis of basic knowledge and skills for Cisco certification prep. For beginning and experienced network engineers tasked with building LAN, WAN, and data center connections, this book lays out clear directions for installing, configuring, and troubleshooting networks with Cisco devices. The full range of certification topics is covered, including all aspects of IOS, NX-OS, and ASA software. The emphasis throughout is on solving the real-world challenges engineers face in configuring network devices, rather than on exhaustive descriptions of hardware features. This practical desk companion doubles as a comprehensive overview of the basic knowledge and skills needed by CCENT, CCNA, and CCNP exam takers. It distills a comprehensive library of cheat sheets, lab configurations, and advanced commands that the authors assembled as senior network engineers for the benefit of junior engineers they train, mentor on the job, and prepare for Cisco certification exams. Prior familiarity with Cisco routing and switching is desirable but not necessary, as Chris Carthern, Dr. Will Wilson, Noel Rivera, and Richard Bedwell start their book with a review of the basics of configuring routers and switches. All the more advanced chapters have labs and exercises to reinforce the concepts learned. This book differentiates itself from other Cisco books on the market by approaching network security from a hacker's perspective. Not only does it provide network security recommendations but it teaches you how to use black-hat tools such as oclHashcat, Loki, Burp Suite, Scapy, Metasploit, and Kali to actually test the security concepts learned. Readers of Cisco Networks will learn How to configure Cisco switches, routers, and data center devices in typical corporate network architectures The skills and knowledge needed to pass Cisco CCENT, CCNA, and CCNP certification exams How to set up and configure at-home labs using virtual machines and lab exercises in the book to practice advanced Cisco commands How to implement networks of Cisco

devices supporting WAN, LAN, and data center configurations How to implement secure network configurations and configure the Cisco ASA firewall How to use black-hat tools and network penetration techniques to test the security of your network Written by a Cisco expert, this exam-prep title prepares students to pass the internetworking and troubleshooting exam for the CCNP. Real-world case studies and more than 500 practice questions help the reader gain practical experience in the topic. The CD-ROM features a Visio graphic package and a Cisco icon package. 200 illus. Improve the delivery of services on your existing network with Application Performance Management (APM).

This reference covers all aspects of managing active directory, including management and monitoring philosophies, and working scripts and programs useful in enterprise active directory environments. It focuses on post-deployment issues.

Like sysadmins before them, network engineers are finding that they cannot do their work manually anymore. As the field faces new protocols, technologies, delivery models, and a pressing need for businesses to be more agile and flexible, network automation is becoming essential. This practical guide shows network engineers how to use a range of technologies and tools—including Linux, Python, JSON, and XML—to automate their systems through code. Network programming and automation will help you simplify tasks involved in configuring, managing, and operating network equipment, topologies, services, and connectivity. Through the course of the book, you'll learn the basic skills and tools you need to make this critical transition. This book covers: Python programming basics: data types, conditionals, loops, functions, classes, and modules Linux fundamentals to provide the foundation you need on your network automation journey Data formats and models: JSON, XML, YAML, and YANG for networking Jinja templating and its applicability for creating network device configurations The role of application programming interfaces (APIs) in network automation Source control with Git to manage code changes during the automation process How Ansible, Salt, and StackStorm open source automation tools can be used to automate network devices Key tools and technologies required for a Continuous Integration (CI) pipeline in network operations

Modern organizations rely on Security Operations Center (SOC) teams to vigilantly watch security systems, rapidly detect breaches, and respond quickly and effectively. To succeed, SOCs desperately need more qualified cybersecurity professionals. Cisco's new Cisco Certified CyberOps Associate certification prepares candidates to begin a career working as associate-level cybersecurity analysts within SOCs. It demonstrates their knowledge about creating, operating, and working within computer security incident response teams (CSIRTs) and product security incident response teams (PSIRTs); the incident response lifecycle, and cyber forensics. To earn this valuable certification, candidates must pass the new Understanding Cisco Cybersecurity Operations Fundamentals (200-201 CBROPS) consolidated exam. Cisco CyberOps Associate CBROPS 200-201 Official Cert Guide is Cisco's official, comprehensive self-study resource for this exam. Designed for all exam candidates, it covers every exam objective concisely and logically, with extensive teaching features that promote retention and understanding. You'll find: Pre-chapter quizzes to assess knowledge upfront and focus your study more efficiently Foundation topics sections that explain concepts and configurations, and link theory to practice Key topics sections

calling attention to every figure, table, and list you must know Exam Preparation sections with additional chapter review features Final preparation chapter providing tools and a complete final study plan A customizable practice test library This guide offers comprehensive, up-to-date coverage of all CBROPS #200-201 topics related to: Security concepts Security monitoring Host-based analysis Network intrusion analysis Security policies and procedures

Use ACI fabrics to drive unprecedented value from your data center environment With the Cisco Application Centric Infrastructure (ACI) software-defined networking platform, you can achieve dramatic improvements in data center performance, redundancy, security, visibility, efficiency, and agility. In *Deploying ACI*, three leading Cisco experts introduce this breakthrough platform, and walk network professionals through all facets of design, deployment, and operation. The authors demonstrate how ACI changes data center networking, security, and management; and offer multiple field-proven configurations. *Deploying ACI* is organized to follow the key decision points associated with implementing data center network fabrics. After a practical introduction to ACI concepts and design, the authors show how to bring your fabric online, integrate virtualization and external connections, and efficiently manage your ACI network. You'll master new techniques for improving visibility, control, and availability; managing multitenancy; and seamlessly inserting service devices into application data flows. The authors conclude with expert advice for troubleshooting and automation, helping you deliver data center services with unprecedented efficiency. Understand the problems ACI solves, and how it solves them Design your ACI fabric, build it, and interface with devices to bring it to life Integrate virtualization technologies with your ACI fabric Perform networking within an ACI fabric (and understand how ACI changes data center networking) Connect external networks and devices at Layer 2/Layer 3 levels Coherently manage unified ACI networks with tenants and application policies Migrate to granular policies based on applications and their functions Establish multitenancy, and evolve networking, security, and services to support it Integrate L4–7 services: device types, design scenarios, and implementation Use multisite designs to meet rigorous requirements for redundancy and business continuity Troubleshoot and monitor ACI fabrics Improve operational efficiency through automation and programmability

*Cisco IOS 12.0 Switching Services* is a comprehensive guide detailing available Cisco IOS switching alternatives. Cisco switching services range from fast switching and Netflow switching to LAN Emulation. This book describes how to configure routing between virtual LANs (VLANs) and teach how to effectively configure and implement VLANs on switches.

The complete guide to building and managing next-generation data center network fabrics with VXLAN and BGP EVPN This is the only comprehensive guide and deployment reference for building flexible data center network fabrics with VXLAN and BGP EVPN technologies. Writing for experienced network professionals, three leading Cisco experts address everything from standards and protocols to functions, configurations, and operations. The authors first explain why and how data center fabrics are evolving, and introduce Cisco's fabric journey. Next, they review key switch roles, essential data center network fabric terminology, and core concepts such as network attributes, control plane details, and the associated data plane encapsulation.

Building on this foundation, they provide a deep dive into fabric semantics, efficient creation and addressing of the underlay, multi-tenancy, control and data plane interaction, forwarding flows, external interconnectivity, and service appliance deployments. You'll find detailed tutorials, descriptions, and packet flows that can easily be adapted to accommodate customized deployments. This guide concludes with a full section on fabric management, introducing multiple opportunities to simplify, automate, and orchestrate data center network fabrics. Learn how changing data center requirements have driven the evolution to overlays, evolved control planes, and VXLAN BGP EVPN spine-leaf fabrics Discover why VXLAN BGP EVPN fabrics are so scalable, resilient, and elastic Implement enhanced unicast and multicast forwarding of tenant traffic over the VXLAN BGP EVPN fabric Build fabric underlays to efficiently transport uni- and multi-destination traffic Connect the fabric externally via Layer 3 (VRF-Lite, LISP, MPLS L3VPN) and Layer 2 (VPC) Choose your most appropriate Multi-POD, multifabric, and Data Center Interconnect (DCI) options Integrate Layer 4-7 services into the fabric, including load balancers and firewalls Manage fabrics with POAP-based day-0 provisioning, incremental day 0.5 configuration, overlay day-1 configuration, or day-2 operations

Master the design and deployment of small and medium-sized business networks. Combining transnationalism and exoticism, transorientalism is the new orientalism of the age of globalization. With its roots in earlier times, it is a term that emphasizes alteration, mutation, and exchange between cultures. While the familiar orientalisms persist, transorientalism is a term that covers notions like the adoption of a hat from a different country for Turkish nationalist dress, the fact that an Italian could be one of the most influential directors in recent Chinese cinema, that Muslim women artists explore Islamic womanhood in non-Islamic countries, that artists can embrace both indigenous and non-indigenous identity at the same time. This is more than nostalgia or bland nationalism. It is a reflection of the effect that communication and representation in recent decades have brought to the way in which national identity is crafted and constructed—yet this does not make it any less authentic. The diversity of race and culture, the manner in which they are expressed and transacted, are most evident in art, fashion, and film. This much-needed book offers a refreshing, informed, and incisive account of a paradigm shift in the ways in which identity and otherness is moulded, perceived, and portrayed.

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

The complete guide to Cisco® IWAN: features, benefits, planning, and deployment Using Cisco Intelligent WAN (IWAN), businesses can deliver an uncompromised experience, security, and reliability to branch offices over any connection. Cisco IWAN simplifies WAN design, improves network responsiveness, and accelerates deployment of new services. Now, there's an authoritative single-source guide to Cisco IWAN: all you need to understand it, design it, and deploy it for maximum value. In Cisco Intelligent WAN (IWAN), leading Cisco experts cover all key IWAN technologies and components, addressing issues ranging from visibility and provisioning to troubleshooting and optimization. They offer extensive practical guidance on migrating to IWAN from your existing WAN infrastructure. This guide will be indispensable for all experienced network professionals who support WANs, are deploying Cisco IWAN solutions, or use related technologies such as DMVPN or PfR. Deploy Hybrid WAN connectivity to increase WAN capacity and improve application performance Overlay DMVPN on WAN transport to simplify operations, gain transport independence, and improve VPN scalability Secure DMVPN tunnels and IWAN routers Use Application Recognition to support QoS, Performance Routing (PfR), and application visibility Improve application delivery and WAN efficiency via PfR Monitor hub, transit, and branch sites, traffic classes, and channels Add application-level visibility and per-application monitoring to IWAN routers Overcome latency and bandwidth inefficiencies that limit application performance Use Cisco WAAS to customize each location's optimizations, application accelerations, and virtualization Smoothly integrate Cisco WAAS into branch office network infrastructure Ensure appropriate WAN application responsiveness and experience Improve SaaS application performance with Direct Internet Access (DIA) Perform pre-migration tasks, and prepare your current WAN for IWAN Migrate current point-to-point and multipoint technologies to IWAN

Learn the art of designing, implementing, and managing Cisco's networking solutions on datacenters, wirelessly, security and mobility to set up an Enterprise network. About This Book Implement Cisco's networking solutions on datacenters and wirelessly, Cloud, Security, and Mobility Leverage Cisco IOS to manage network infrastructures. A practical guide that will show how to troubleshoot common issues on the network. Who This Book Is For This book is targeted at network designers and IT engineers who are involved in designing, configuring, and operating enterprise networks, and are in taking decisions to make the necessary network changes to meet newer business needs such as evaluating new technology choices, enterprise growth, and adding new services on the network. The reader is expected to have a general understanding of the fundamentals of networking, including the OSI stack and IP addressing. What You Will Learn Understand the network lifecycle approach Get to know what makes a good network design Design components and technology choices at various places in the network (PINS) Work on sample configurations for network devices in the LAN/ WAN/ DC, and the wireless domain Get familiar with the configurations and best practices for securing the network Explore best practices for network operations In Detail Most

enterprises use Cisco networking equipment to design and implement their networks. However, some networks outperform networks in other enterprises in terms of performance and meeting new business demands, because they were designed with a visionary approach. The book starts by describing the various stages in the network lifecycle and covers the plan, build, and operate phases. It covers topics that will help network engineers capture requirements, choose the right technology, design and implement the network, and finally manage and operate the network. It divides the overall network into its constituents depending upon functionality, and describe the technologies used and the design considerations for each functional area. The areas covered include the campus wired network, wireless access network, WAN choices, datacenter technologies, and security technologies. It also discusses the need to identify business-critical applications on the network, and how to prioritize these applications by deploying QoS on the network. Each topic provides the technology choices, and the scenario, involved in choosing each technology, and provides configuration guidelines for configuring and implementing solutions in enterprise networks. Style and approach A step-by-step practical guide that ensures you implement Cisco solutions such as enterprise networks, cloud, and data centers, on small-to-large organizations.

This is the eBook version of the print title. Note that the eBook does not provide access to the practice test software that accompanies the print book. Learn, prepare, and practice for CCNA Cyber Ops SECFND 210-250 exam success with this Cert Guide from Pearson IT Certification, a leader in IT Certification learning. Master CCNA Cyber Ops SECFND 210-250 exam topics Assess your knowledge with chapter-ending quizzes Review key concepts with exam preparation tasks CCNA Cyber Ops SECFND 210-250 Official Cert Guide is a best-of-breed exam study guide. Cisco enterprise security experts Omar Santos, Joseph Muniz, and Stefano De Crescenzo share preparation hints and test-taking tips, helping you identify areas of weakness and improve both your conceptual knowledge and hands-on skills. Material is presented in a concise manner, focusing on increasing your understanding and retention of exam topics. The book presents you with an organized test preparation routine through the use of proven series elements and techniques. Exam topic lists make referencing easy. Chapter-ending Exam Preparation Tasks help you drill on key concepts you must know thoroughly. Review questions help you assess your knowledge, and a final preparation chapter guides you through tools and resources to help you craft your final study plan. Well-regarded for its level of detail, assessment features, and challenging review questions and exercises, this study guide helps you master the concepts and techniques that will allow you to succeed on the exam the first time. The study guide helps you master all the topics on the CCNA Cyber Ops SECFND exam, including: Fundamentals of networking protocols and networking device types Network security devices and cloud services Security principles Access control models Security management concepts and techniques Fundamentals of cryptography and PKI Essentials of Virtual Private Networks (VPNs) Windows-based Analysis Linux /MAC OS X-based Analysis Endpoint security technologies Network and host telemetry Security monitoring operations and challenges Types of attacks and vulnerabilities Security evasion techniques

Implementing Cisco Networking Solutions Configure, implement, and manage complex

network designsPackt Publishing Ltd

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].

The complete guide to transforming enterprise networks with Cisco DNA As networks become more complex and dynamic, organizations need better ways to manage and secure them. With the Cisco Digital Network Architecture, network operators can run entire network fabrics as a single, programmable system by defining rules that span their devices and move with their users. Using Cisco intent-based networking, you spend less time programming devices, managing configurations, and troubleshooting problems so you have more time for driving value from your network, your applications, and most of all, your users. This guide systematically introduces Cisco DNA, highlighting its business value propositions, design philosophy, tenets, blueprints, components, and solutions. Combining insider information with content previously scattered through multiple technical documents, it provides a single source for evaluation, planning, implementation, and operation. The authors bring together authoritative insights for multiple business and technical audiences. Senior executives will learn how DNA can help them drive digital transformation for competitive advantage. Technical decision-makers will discover powerful emerging solutions for their specific needs. Architects will find essential recommendations, interdependencies, and caveats for planning deployments. Finally, network operators will learn how to use DNA Center's modern interface to streamline, automate, and improve virtually any network management task.

- Accelerate the digital transformation of your business by adopting an intent-based network architecture that is open, extensible, and programmable
- Integrate virtualization, automation, analytics, and cloud services to streamline operations and create new business opportunities
- Dive deep into hardware, software, and protocol innovations that lay the programmable infrastructure foundation for DNA
- Virtualize advanced network functions for fast, easy, and flexible deployments
- Translate business intent into device configurations and simplify, scale, and automate network operations using controllers
- Use analytics to tune performance, plan capacity, prevent threats, and simplify troubleshooting
- Learn how Software-Defined Access improves network flexibility, security, mobility, visibility, and performance
- Use DNA Assurance to track the health of clients, network devices, and applications to reveal hundreds of actionable insights
- See how DNA Application Policy supports granular application recognition and end-to-end treatment, for even encrypted applications
- Identify malware, ransomware, and other threats in encrypted traffic

Cisco® Nexus switches and the new NX-OS operating system are rapidly becoming the new de facto standards for data center distribution/aggregation layer networking. NX-OS builds on Cisco IOS to provide advanced features that will be increasingly crucial to efficient data center operations. NX-OS and Cisco Nexus Switching is the definitive guide to utilizing these powerful new capabilities in enterprise environments. In this book, three Cisco consultants cover every facet of deploying, configuring, operating, and troubleshooting NX-OS in the data center. They review the key NX-OS enhancements for high availability, virtualization, In-Service Software Upgrades (ISSU), and security. In this book, you will discover support and configuration best practices for

working with Layer 2 and Layer 3 protocols and networks, implementing multicasting, maximizing serviceability, providing consistent network and storage services, and much more. The authors present multiple command-line interface (CLI) commands, screen captures, realistic configurations, and troubleshooting tips—all based on their extensive experience working with customers who have successfully deployed Nexus switches in their data centers. Learn how Cisco NX-OS builds on and differs from IOS Work with NX-OS user modes, management interfaces, and system files Configure Layer 2 networking: VLANs/private VLANs, STP, virtual port channels, and unidirectional link detection Configure Layer 3 EIGRP, OSPF, BGP, and First Hop Redundancy Protocols (FHRPs) Set up IP multicasting with PIM, IGMP, and MSDP Secure NX-OS with SSH, Cisco TrustSec, ACLs, port security, DHCP snooping, Dynamic ARP inspection, IP Source Guard, keychains, Traffic Storm Control, and more Build high availability networks using process modularity and restart, stateful switchover, nonstop forwarding, and in-service software upgrades Utilize NX-OS embedded serviceability, including Switched Port Analyzer (SPAN), Smart Call Home, Configuration Checkpoint/Rollback, and NetFlow Use the NX-OS Unified Fabric to simplify infrastructure and provide ubiquitous network and storage services Run NX-OS on Nexus 1000V server-based software switches This book is part of the Networking Technology Series from Cisco Press®, which offers networking professionals valuable information for constructing efficient networks, understanding new technologies, and building successful careers. Network threats are emerging and changing faster than ever before. Cisco Next-Generation Network Security technologies give you all the visibility and control you need to anticipate and meet tomorrow's threats, wherever they appear. Now, three Cisco network security experts introduce these products and solutions, and offer expert guidance for planning, deploying, and operating them. The authors present authoritative coverage of Cisco ASA with FirePOWER Services; Cisco Firepower Threat Defense (FTD); Cisco Next-Generation IPS appliances; the Cisco Web Security Appliance (WSA) with integrated Advanced Malware Protection (AMP); Cisco Email Security Appliance (ESA) with integrated Advanced Malware Protection (AMP); Cisco AMP ThreatGrid Malware Analysis and Threat Intelligence, and the Cisco Firepower Management Center (FMC). You'll find everything you need to succeed: easy-to-follow configurations, application case studies, practical triage and troubleshooting methodologies, and much more. Effectively respond to changing threat landscapes and attack continuums Design Cisco ASA with FirePOWER Services and Cisco Firepower Threat Defense (FTD) solutions Set up, configure, and troubleshoot the Cisco ASA FirePOWER Services module and Cisco Firepower Threat Defense Walk through installing AMP Private Clouds Deploy Cisco AMP for Networks, and configure malware and file policies Implement AMP for Content Security, and configure File Reputation and File Analysis Services Master Cisco AMP for Endpoints, including custom detection, application control, and policy management Make the most of the AMP ThreatGrid dynamic malware analysis engine Manage Next-Generation Security Devices with the Firepower Management Center (FMC) Plan, implement, and configure Cisco Next-Generation IPS—including performance and redundancy Create Cisco Next-Generation IPS custom reports and analyses Quickly identify the root causes of security problems

The essential guide for understanding Ethernet switched networks Understand various

Ethernet technologies from 10BASE-T to Gigabit Ethernet Learn about common switching modes, paths, and architectures Delve into the Cisco Catalyst switch architecture and examine the various Catalyst switch models, including the 6000/6500, 4500, and 3750 Become familiar with VLAN concepts, including types of trunks, VLAN Trunking Protocol (VTP), and private VLANs Understand Multilayer Switching (MLS) and the various hardware components that make MLS work Learn how to configure Cisco Catalyst switches in both native and hybrid mode Implement QoS on Cisco Catalyst switches Deploy multicast features and protocols, including PIM, IGMP snooping, and CGMP Utilize data link layer features such as BPDU Guard, BPDU Filter, Root Guard, Loop Guard, RSTP, and MST Evaluate design and configuration best practices Learn how to manage LANs and troubleshoot common problems Local-area networks (LANs) are becoming increasingly congested and overburdened because of a dramatic increase in traffic, faster CPUs and operating systems, and more network-intensive applications. Many organizations that use network and computing technology use LAN switching to take advantage of high-speed traffic forwarding and improved performance of traditional Ethernet technologies that don't require costly wiring upgrades or time-consuming host reconfiguration. Cisco LAN Switching Fundamentals provides administrators of campus networks with the most up-to-date introduction to LAN switching within a traditional Ethernet environment. Cisco LAN Switching Fundamentals presents an in-depth look at modern campus network requirements. It provides an easy-to-understand introduction to LAN switching best practices using Cisco Catalyst switches. This book provides you with a wealth of details on the architecture, operation, and configuration of the Cisco Catalyst family of switches. You learn about a wide range of topics, including quality of service (QoS), multicast, Rapid Spanning Tree Protocol (RSTP), Multiple Spanning Tree (MST), private virtual LANs (VLANs), and configuration using the native and hybrid software interfaces. Design advice and configuration examples are discussed liberally throughout the book to provide you with the best perspective on effective deployment techniques. Finally, the book wraps up with a discussion of steps necessary to troubleshoot common problems and optimize LAN performance. Whether you are looking for an introduction to LAN switching principles and practices or a Cisco Catalyst configuration and troubleshooting reference, this book provides you with the invaluable insight you need to design and manage high-performance campus networks.

Thoroughly prepare for the revised Cisco CCIE Wireless v3.x certification exams Earning Cisco CCIE Wireless certification demonstrates your broad theoretical knowledge of wireless networking, your strong understanding of Cisco WLAN technologies, and the skills and technical knowledge required of an expert-level wireless network professional. This guide will help you efficiently master the knowledge and skills you'll need to succeed on both the CCIE Wireless v3.x written and lab exams. Designed to help you efficiently focus your study, achieve mastery, and build confidence, it focuses on conceptual insight, not mere memorization. Authored by five of the leading Cisco wireless network experts, it covers all areas of the CCIE Wireless exam blueprint, offering complete foundational knowledge for configuring and troubleshooting virtually any Cisco wireless deployment. Plan and design enterprise-class WLANs addressing issues ranging from RF boundaries to AP positioning, power levels, and density Prepare and set up wireless network infrastructure, including Layer

2/3 and key network services Optimize existing wired networks to support wireless infrastructure Deploy, configure, and troubleshoot Cisco IOS Autonomous WLAN devices for wireless bridging Implement, configure, and manage AireOS Appliance, Virtual, and Mobility Express Controllers Secure wireless networks with Cisco Identity Services Engine: protocols, concepts, use cases, and configuration Set up and optimize management operations with Prime Infrastructure and MSE/CMX Design, configure, operate, and troubleshoot WLANs with real-time applications

Now fully updated for the new Cisco CAPPS 300-085 exam, *Implementing Cisco Collaboration Applications (CAPPS) Foundation Learning Guide* is your Cisco® authorized learning tool for CCNP® Collaboration preparation. Part of the Cisco Press Foundation Learning Series, it teaches advanced skills for designing, deploying, configuring, and troubleshooting Cisco Collaboration and Unified Communications applications, devices, and networks. Author Chris Olsen shows how to effectively use Cisco Unity Connection, Cisco Unity Express, Cisco Instant Message and Presence, Cisco TelePresence Video Communication Server, and Cisco TelePresence Management Suite in production environments. He begins by introducing the server platforms and overlays that are the basis for all Cisco Unity Connection design and integration. Next, he presents in-depth coverage of a wide range of essential tasks—from user configuration to voicemail redundancy, configuring Cisco Jabber Mobile, to provisioning Cisco Prime Collaboration. Each chapter opens with a list of topics that clearly identifies its focus. Each chapter ends with a summary of key concepts for quick study, as well as review questions to assess and reinforce your understanding. Throughout, configuration examples and sample verification outputs illustrate critical issues in network operation and troubleshooting. Whether you are preparing for the CCNP Collaboration certification exams or you are just interested in learning about how to deploy and operate Cisco collaboration applications, you will find this book to be an invaluable resource. Shows how to integrate Cisco Unity Connection with Cisco Unified Communications Manager or other PBXs Covers configuring Cisco Unity Connection users, templates, service classes, distribution lists, security, LDAP, dial plans, and call management Walks through Unified Messaging single Inbox configuration Shows how to design, integrate, and configure feature-rich branch office messaging solutions with Cisco Unity Express Explains Cisco Unified IM and Presence components, design, integration, deployment, and feature configuration Covers Cisco Jabber and Cisco Jabber Mobile configuration Guides you through deploying Cisco Collaboration Systems Applications with Cisco Prime Collaboration Introduces Cisco TelePresence Management Suite (Cisco TMS) capabilities and scheduling options This book is in the Foundation Learning Guide Series. These guides are developed together with Cisco® as the only authorized, self-paced learning tools that help networking professionals build their understanding of networking concepts and prepare for Cisco certification exams.

An introduction to effectively deploying and troubleshooting Cisco content networking solutions.

Trust the best selling Official Cert Guide series from Cisco Press to help you learn, prepare, and practice for exam success. This series is built with the objective of providing assessment, review, and practice to help ensure you are fully prepared for your certification exam. Master Cisco CCNA Wireless 200-355 exam topics Assess

your knowledge with chapter-opening quizzes Review key concepts with exam preparation tasks This is the eBook edition of the CCNA Wireless 200-355 Official Cert Guide. This eBook does not include the companion DVD with practice exam that comes with the print edition. CCNA Wireless 200-355 Official Cert Guide presents you with an organized test-preparation routine through the use of proven series elements and techniques. "Do I Know This Already?" quizzes open each chapter and enable you to decide how much time you need to spend on each section. Exam topic lists make referencing easy. Chapter-ending Exam Preparation Tasks help you drill on key concepts you must know thoroughly. CCNA Wireless 200-355 Official Cert Guide focuses specifically on the objectives for the Cisco CCNA WIFUND exam. Leading network engineer and best-selling Cisco certification author David Hucaby shares preparation hints and test-taking tips, helping you identify areas of weakness and improve both your conceptual knowledge and hands-on skills. Material is presented in a concise manner, focusing on increasing your understanding and retention of exam topics. Well regarded for its level of detail, assessment features, comprehensive design scenarios, and challenging review questions and exercises, this official study guide helps you master the concepts and techniques that will enable you to succeed on the exam the first time. The official study guide helps you master all the topics on the CCNA WIFUND 200-355 exam, including RF signals, modulations, standards, and performance Antenna theory Wireless LAN topologies and 802.11 frame types Wireless AP coverage planning Cisco wireless architectures Autonomous, cloud, and controller-based deployments Controller discovery, roaming, and RRM Wireless security WLAN configuration Wireless guest network implementation Client connectivity Cisco wireless network management Troubleshooting interference and connectivity CCNA Wireless 200-355 Official Cert Guide is part of a recommended learning path from Cisco that includes simulation and hands-on training from authorized Cisco Learning Partners and self-study products from Cisco Press. To find out more about instructor-led training, e-learning, and hands-on instruction offered by authorized Cisco Learning Partners worldwide, please visit <http://www.cisco.com/web/learning/index.html>.

An essential guide to understanding the Cisco IOS architecture In-depth coverage of Cisco's IOS Software architecture provides crucial information to: Prevent network problems and optimize performance through more efficient design and configuration Isolate and resolve network problems more quickly and easily Apply the appropriate packet switching method, such as process switching, fast switching, optimum switching, or Cisco Express Forwarding (CEF) Understand the hardware architecture, packet buffering, and packet switching processes for shared memory routers (Cisco 1600, 2500, 3600, 4000, 4500, and 4700 series) Understand the hardware architecture, packet buffering, and packet switching processes for the Cisco 7200 series routers Understand the hardware architecture, packet buffering, and packet switching processes for the Cisco 7500 series routers Understand the hardware architecture, packet buffering, and packet switching processes for the Cisco GSR 12000 series routers Further your knowledge of how IOS Software implements Quality of Service (QoS) Inside Cisco IOS Software Architecture offers crucial and hard-to-find information on Cisco's Internetwork Operating System (IOS) Software. IOS Software provides the means by which networking professionals configure and manage Cisco networking devices. Beyond understanding the Cisco IOS command set, comprehending what

happens inside Cisco routers will help you as a network designer or engineer to perform your job more effectively. By understanding the internal operations of IOS Software, you will be able to take architectural considerations into account when designing networks and isolate problems more easily when troubleshooting networks. Inside Cisco IOS Software Architecture provides essential information on the internal aspects of IOS Software at this level, and it is an invaluable resource for better understanding the intricacies of IOS Software and how it affects your network. Inside Cisco IOS Software Architecture begins with an overview of operating system concepts and the IOS Software infrastructure, including processes, memory management, CPU scheduling, packet buffers, and device drivers, as well as a discussion of packet switching architecture with detailed coverage of the various platform-independent switching methods, including process switching, fast switching, optimum switching, and Cisco Express Forwarding (CEF). The book then delves into the intricate details of the design and operation of platform-specific features, including the 1600, 2500, 4x00, 3600, 7200, 7500, and GSR Cisco routers. Finally, an overview of IOS Quality of Service (QoS) is provided, including descriptions of several QoS methods, such as priority queuing, custom queuing, weighted fair queuing, and modified deficit round robin.

The complete resource for understanding and deploying IP quality of service for Cisco networks Learn to deliver and deploy IP QoS and MPLS-based traffic engineering by understanding: QoS fundamentals and the need for IP QoS The Differentiated Services QoS architecture and its enabling QoS functionality The Integrated Services QoS model and its enabling QoS functions ATM, Frame Relay, and IEEE 802.1p/802.1Q QoS technologies and how they work with IP QoS MPLS and MPLS VPN QoS and how they work with IP QoS MPLS traffic engineering Routing policies, general IP QoS functions, and other miscellaneous QoS information Quality-of-service (QoS) technologies provide networks with greater reliability in delivering applications, as well as control over access, delay, loss, content quality, and bandwidth. IP QoS functions are crucial in today's scalable IP networks. These networks are designed to deliver reliable and differentiated Internet services by enabling network operators to control network resources and use. Network planners, designers, and engineers need a thorough understanding of QoS concepts and features to enable their networks to run at maximum efficiency and to deliver the new generation of time-critical multimedia and voice applications. IP Quality of Service serves as an essential resource and design guide for anyone planning to deploy QoS services in Cisco networks. Author Srinivas Vegesna provides complete coverage of Cisco IP QoS features and functions, including case studies and configuration examples. The emphasis is on real-world application-going beyond conceptual explanations to teach actual deployment. IP Quality of Service is written for internetworking professionals who are responsible for designing and maintaining IP services for corporate intranets and for service provider network infrastructures. If you are a network engineer, architect, manager, planner, or operator who has a rudimentary knowledge of QoS technologies, this book will provide you with practical insights on what you need to consider when designing and implementing various degrees of QoS in the network. Because incorporating some measure of QoS is an integral part of any network design process, IP Quality of Service applies to all IP networks-corporate intranets, service provider networks, and the Internet.

CCNA ICND2 200-101 Official Cert Guide, Academic Edition, is a comprehensive textbook and study package for an intermediate-level networking course. This book has been completely revised to align to Cisco's new CCNA 200-101 ICND2 exam. Material is presented in a concise manner, focusing on increasing student's retention and recall of exam topics. The book is printed in four color, allowing students to benefit from carefully crafted figures that utilize color to convey concepts. Students will organize their study through the use of the consistent features in these chapters, including:

- Foundation Topics -- These sections make up the majority of the page count, explaining concepts, configurations, with emphasis on the theory and concepts, and with linking the theory to the meaning of the configuration commands.
- Key Topics -- Inside the Foundation Topics sections, every figure, table, or list that should absolutely be understood and remembered for the exam is noted with the words "Key Topic" in the margin. This tool allows the reader to quickly review the most important details in each chapter.
- Chapter-ending Summaries -- These bulleted lists provide a quick and concise review of the key topics covered in each chapter.
- Chapter-ending Review Questions -- Each chapter provides a set of multiple choice questions that help student's test their knowledge of the chapter concepts, including answers and full explanations.
- Chapter-ending Exercises -- Each chapter concludes with a series of exercises designed to help students increase their retention of the chapter content including key term reviews, key topic tables, command review exercises, and memory table exercises.
- Part Reviews -- This new edition includes a new part review feature that helps students consolidate their knowledge of concepts presented across multiple chapters. A new mind mapping exercise helps students build strong mental maps of concepts. A new exam bank of part review questions helps students test themselves with scenario-based questions that span multiple topics. In addition to these powerful chapter learning, review, and practice features, this book also contains several other features that make it a truly effective and comprehensive study package, including: A Getting Started chapter at the beginning of the book offer terrific advice for how to use the book features and build an effective study plan. The DVD contains over 60 minutes of video mentoring from the author on challenging topics such as OSPF, EIGRP, EIGRP Metrics, PPP, and CHAP. The book comes complete with the CCNA ICND2 Network Simulator Lite software, providing students with the opportunity to practice their hands-on command line interface skills with Cisco routers and switches. The 13 labs included for free with this product cover a range of EIGRP configuration and troubleshooting exercises. The Pearson IT Certification Practice Test software that comes with the book includes 4 full ICND2 exams and 4 full CCNA exams, providing tons of opportunities to assess and practice. Including the book review questions and part review questions, the exam bank includes more than 500 unique practice questions. A Final Preparation Chapter helps students review for final exams and prepare to take the official Cisco CCNA exams, if they want to achieve that certification. A Study Plan Template is included on the DVD to help students organize their study time.

Migrate to Intent-Based Networking—and improve network manageability, cost, agility, security, and simplicity With Intent-Based Networking (IBN), you can create networks that capture and automatically activate business intent, assure that your network responds properly, proactively detect and contain security threats, and remedy network issues before users even notice. Intent-Based Networking makes networks far more

valuable, but few organizations have the luxury of building them from the ground up. In this book, leading expert Pieter-Jans Nefkens presents a unique four-phase approach to preparing and transforming campus network infrastructures, architectures, and organization—helping you gain maximum value from IBN with minimum disruption and cost. The author reviews the problems IBN is intended to solve, and illuminates its technical, business, and cultural implications. Drawing on his pioneering experience, he makes specific recommendations, identifies pitfalls, and shows how to overcome them. You'll learn how to implement IBN with the Cisco Digital Network Architecture and DNA Center and walk through real-world use cases. In a practical appendix, Nefkens even offers detailed technical configurations to jumpstart your own transformation. Review classic campus network deployments and understand why they need to change Learn how Cisco Digital Network Architecture (DNA) provides a solid foundation for state-of-the-art next generation network infrastructures Understand "intent" and how it can be applied to network infrastructure Explore tools for enabling, automating, and assuring Intent-Based Networking within campus networks Transform to Intent-Based Networking using a four-phased approach: Identify challenges; Prepare for Intent; Design and Deploy; and Enable Intent Anticipate how Intent-Based Networking will change your enterprise architecture, IT operations, and business

Leading Cisco authority Todd Lammle helps you gain insights into the new core Cisco network technologies Understanding Cisco Networking Technologies is an important resource for those preparing for the new Cisco Certified Network Associate (CCNA) certification exam as well as IT professionals looking to understand Cisco's latest networking products, services, and technologies. Written by bestselling author and internationally recognized Cisco expert Todd Lammle, this in-depth guide provides the fundamental knowledge required to implement and administer a broad range of modern networking and IT infrastructure. Cisco is the worldwide leader in network technologies—80% of the routers on the Internet are Cisco. This authoritative book provides you with a solid foundation in Cisco networking, enabling you to apply your technical knowledge to real-world tasks. Clear and accurate chapters cover topics including routers, switches, controllers and other network components, physical interface and cabling, IPv6 addressing, discovery protocols, wireless infrastructure, security features and encryption protocols, controller-based and software-defined architectures, and more. After reading this essential guide, you will understand: Network fundamentals Network access IP connectivity and IP services Security fundamentals Automation and programmability Understanding Cisco Networking Technologies is a must-read for anyone preparing for the new CCNA certification or looking to gain a primary understanding of key Cisco networking technologies.

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

CCNA Data Center DCICT 640-916 Official Cert Guide CCNA Data Center DCICT 640-916 Official Cert Guide from Cisco Press enables you to succeed on the exam the first time and is the only self-study resource approved by Cisco. A team of leading Cisco data center experts shares preparation hints and test-taking tips, helping you identify areas of weakness and improve both your conceptual knowledge and hands-on skills. This complete, official study package includes --A test-preparation routine proven to help you pass the exam --“Do I Know This Already?” quizzes, which enable you to decide how much time you need to spend on each section --Part-ending exercises, which help you drill on key concepts you must know thoroughly --The powerful Pearson IT Certification Practice Test software, complete with hundreds of well-reviewed, exam-realistic questions, customization options, and detailed performance reports --Study plan suggestions and templates to help you organize and optimize your study time --A final preparation chapter that guides you through tools and resources to help you craft your review and test-taking strategies Well regarded for its level of detail, study plans, assessment features, and challenging review questions and exercises, this official study guide helps you master the concepts and techniques that ensure your exam success. The official study guide helps you master topics on the CCNA Data Center DCICT 640-916 exam, including --Cisco data center concepts: architectures, devices, layers, modular design, vPC, FabricPath, Cisco Nexus switches, and more --Data center unified fabric: FCoE, multihop, VIFs, FEX, and setup --Storage networking: concepts, targets, verification, connectivity, zoning, setup, and configuration --Data center virtualization: servers, devices, and Nexus 1000V, including setup and operations --Cisco Unified Computing: concepts, discovery, connectivity, setup, and UCSM --Data center network services: ACE load balancing, virtual context, HA, management, global/local solutions, and WAAS The CD-ROM contains more than 450 practice questions for the exam, memory table exercises and answer keys, and a study planner tool. Includes Exclusive Offer for 70% Off Premium Edition eBook and Practice Test Pearson IT Certification Practice Test minimum system requirements: Windows XP (SP3), Windows Vista (SP2), Windows 7, or Windows 8; Microsoft .NET Framework 4.0 Client; Pentium class 1GHz processor (or equivalent); 512 MB RAM; 650 MB disk space plus 50 MB for each downloaded practice exam; access to the Internet to register and download exam databases

Cisco Wireless Design Fundamentals, teaches an effective methodology for wireless network planning and design. It is a reference guide that efficiently explains wireless principles, methodologies and technologies while serving as a practical design guide as well. That is accomplished using a real-world wireless case study as the framework along with a structured design methodology that teaches all phases of a wireless design project. The case study is of a fictitious financial services company that is implementing wireless at all offices around the country. The standard methodology for network design presented is used as a framework for planning, designing and implementing the wireless design. In the case study of the fictitious financial company,

real-world issues and strategies are addressed. Using the structured methodology, readers learn to review client requirements, assess the current network, build the wireless infrastructure, recommend appropriate security and develop a management strategy. Readers will learn to develop a proof of concept strategy, make any modifications, and build a design proposal. Then the design is reviewed with the client to discuss how to implement the design using a structured implementation methodology. Wireless Network Planning and Design Network Assessment Essentials Design and Performance Considerations Detailed Access Point Selection Guide Wireless Network Survey Tech Notes Explain Wireless Concepts Security and Network Management Strategies Chapter Quizzes

Over 90 recipes to maximize automated solutions and policy-drive application profiles using Cisco ACI About This Book Confidently provision your virtual and physical infrastructure for application deployment Integrate Cisco ACI with hypervisors and other third party devices Packed with powerful recipes to automate your IT operations Who This Book Is For If you are a network administrator, system administrator, or engineer and are aware of the basics of Cisco ACI but want to start using it to automate your tasks, then this book is for you What You Will Learn Master the Cisco ACI architecture Discover the ACI fabric with easy-to-follow steps Set up quality of service within ACI Configure external networks with Cisco ACI Integrate with VMware and track VMware virtual machines Configure apply and verify access policies Extend or migrate a VMware virtual-machine LAN inside the ACI fabric Monitor ACI with third party tools and troubleshoot issues In Detail Cisco Application Centric Infrastructure (ACI) is a tough architecture that automates IT tasks and accelerates data-center application deployments. This book focuses on practical recipes to help you quickly build, manage, and customize hybrid environment for your organization using Cisco ACI. You will begin by understanding the Cisco ACI architecture and its major components. You will then configure Cisco ACI policies and tenants. Next you will connect to hypervisors and other third-party devices. Moving on, you will configure routing to external networks and within ACI tenants and also learn to secure ACI through RBAC. Furthermore, you will understand how to set up quality of service and network programming with REST, XML, Python and so on. Finally you will learn to monitor and troubleshoot ACI in the event of any issues that arise. By the end of the book, you will gain have mastered automating your IT tasks and accelerating the deployment of your applications. Style and approach A set of exciting recipes to automate your IT operations related to datacenters, the Cloud, and networking tasks

ACI Advanced Monitoring and Troubleshooting provides a solid conceptual foundation and in-depth technical knowledge for monitoring and troubleshooting virtually any problem encountered during testing, deployment, or operation of Cisco Application Centric Infrastructure (ACI) infrastructure. Authored by leading ACI support experts at Cisco, it covers all you'll need to keep your ACI deployment working optimally.

Coverage includes: Core ACI concepts and components, including Nexus 9000 Series platforms, APIC controllers, and protocols In-depth insight into ACI's policy model ACI fabric design options: single and multiple data centers, stretched vs. multiple fabrics, and multi-pod/multi-site Automation, orchestration, and the cloud in ACI environments ACI topology and hardware/software specifications End host and network connectivity VMM integration Network management configuration, including SNMP, AAA, and SPAN

Monitoring ACI fabrics and health Getting immediate results through the NX-OS command line interface Troubleshooting use cases: fabric discovery, APIC, management access, contracts, external connectivity, leaf/spine connectivity, end-host connectivity, VMM problems, ACI multi-pod/multi-site problems, and more

End-to-End QoS Network Design Quality of Service for Rich-Media & Cloud Networks Second Edition New best practices, technical strategies, and proven designs for maximizing QoS in complex networks This authoritative guide to deploying, managing, and optimizing QoS with Cisco technologies has been thoroughly revamped to reflect the newest applications, best practices, hardware, software, and tools for modern networks. This new edition focuses on complex traffic mixes with increased usage of mobile devices, wireless network access, advanced communications, and video. It reflects the growing heterogeneity of video traffic, including passive streaming video, interactive video, and immersive videoconferences. It also addresses shifting bandwidth constraints and congestion points; improved hardware, software, and tools; and emerging QoS applications in network security. The authors first introduce QoS technologies in high-to-mid-level technical detail, including protocols, tools, and relevant standards. They examine new QoS demands and requirements, identify reasons to reevaluate current QoS designs, and present new strategic design recommendations. Next, drawing on extensive experience, they offer deep technical detail on campus wired and wireless QoS design; next-generation wiring closets; QoS design for data centers, Internet edge, WAN edge, and branches; QoS for IPsec VPNs, and more.

Tim Szigeti, CCIE No. 9794 is a Senior Technical Leader in the Cisco System Design Unit. He has specialized in QoS for the past 15 years and authored Cisco TelePresence Fundamentals. Robert Barton, CCIE No. 6660 (R&S and Security), CCDE No. 2013::6 is a Senior Systems Engineer in the Cisco Canada Public Sector Operation. A registered Professional Engineer (P. Eng), he has 15 years of IT experience and is primarily focused on wireless and security architectures. Christina Hattingh spent 13 years as Senior Member of Technical Staff in Unified Communications (UC) in Cisco's Services Routing Technology Group (SRTG). There, she spoke at Cisco conferences, trained sales staff and partners, authored books, and advised customers. Kenneth Briley, Jr., CCIE No. 9754, is a Technical Lead in the Cisco Network Operating Systems Technology Group. With more than a decade of QoS design/implementation experience, he is currently focused on converging wired and wireless QoS.

- n Master a proven, step-by-step best-practice approach to successful QoS deployment
- n Implement Cisco-validated designs related to new and emerging applications
- n Apply best practices for classification, marking, policing, shaping, markdown, and congestion management/avoidance
- n Leverage the new Cisco Application Visibility and Control feature-set to perform deep-packet inspection to recognize more than 1000 different applications
- n Use Medianet architecture elements specific to QoS configuration, monitoring, and control
- n Optimize QoS in rich-media campus networks using the Cisco Catalyst 3750, Catalyst 4500, and Catalyst 6500
- n Design wireless networks to support voice and video using a Cisco centralized or converged access WLAN
- n Achieve zero packet loss in GE/10GE/40GE/100GE data center networks
- n Implement QoS virtual access data center designs with the Cisco Nexus 1000V
- n Optimize QoS at the enterprise customer edge
- n Achieve extraordinary levels of QoS in service provider edge networks
- n Utilize new industry standards and QoS technologies, including IETF

RFC 4594, IEEE 802.1Q-2005, HQF, and NBAR2 This book is part of the Networking Technology Series from Cisco Press®, which offers networking professionals valuable information for constructing efficient networks, understanding new technologies, and building successful careers.

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