

Implementing Advanced Cisco Asa Security

The CCNP Security Core SCOR 300-701 Official Cert Guide serves as comprehensive guide for individuals who are pursuing the Cisco CCNP Security certification. This book helps any network professionals that want to learn the skills required to develop a security infrastructure, recognize threats and vulnerabilities to networks, and mitigate security threats. Complete and easy to understand, it explains key concepts and techniques through real-life examples. This book will be valuable to any individual that wants to learn about modern cybersecurity concepts and frameworks.

Learn about network security, including the threats and the ways a network is protected from them. The book also covers firewalls, viruses and virtual private networks.

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 Security 210-260 Official Cert Guide exam topics --Assess your knowledge with chapter-opening quizzes --Review key concepts with exam preparation tasks This is the eBook edition of the CCNA Security 210-260 Official Cert Guide. This eBook does not include the companion CD-ROM with practice exam that comes with the print edition. CCNA Security 210-260 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 Security 210-260 Official Cert Guide focuses specifically on the objectives for the Cisco CCNA Security exam. Networking Security experts Omar Santos and John Stuppi 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. 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 Security exam, including --Networking security concepts --Common security threats --Implementing AAA using IOS and ISE --Bring Your Own Device (BYOD) --Fundamentals of VPN technology and cryptography --Fundamentals of IP security --Implementing IPsec site-to-site VPNs --Implementing SSL remote-access VPNs using Cisco ASA --Securing Layer 2 technologies --Network Foundation Protection (NFP) --Securing the management plane on Cisco IOS devices --Securing the data plane --Securing routing protocols and the control plane --Understanding firewall fundamentals --Implementing Cisco IOS zone-based firewalls --Configuring basic firewall policies on Cisco ASA --Cisco IPS fundamentals --Mitigation technologies for e-mail- and web-based threats --Mitigation technologies for endpoint threats CCNA Security 210-260 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>.

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

All the CCNA Security 640-554 commands in one compact, portable resource Preparing for the latest CCNA® Security exam? Here are all the CCNA Security commands you need in one condensed, portable resource. Filled with valuable, easy-to-access information, the CCNA Security Portable Command Guide is portable enough for you to use whether you're in the server room or the equipment closet. Completely updated to reflect the new CCNA Security 640-554 exam, this quick reference summarizes relevant Cisco IOS® Software commands, keywords, command arguments, and associated prompts, and offers tips and examples for applying these commands to real-world security challenges. Throughout, configuration examples provide an even deeper understanding of how to use IOS to protect networks. Topics covered include • Networking security fundamentals: concepts, policies, strategies, and more • Securing network infrastructure: network foundations, CCP, management plane and access, and data planes (IPv6/IPv4) • Secure connectivity: VPNs, cryptography, IPsec, and more • Threat control and containment: strategies, ACL threat mitigation, zone-based firewalls, and Cisco IOS IPS • Securing networks with ASA: ASDM, basic and advanced settings, and ASA SSL VPNs Bob Vachon is a professor at Cambrian College. He has held CCNP certification since 2002 and has collaborated on many Cisco Networking Academy courses. He was the lead author for the Academy's CCNA Security v1.1 curriculum that aligns to the Cisco IOS Network Security (IINS) certification exam (640-554). • Access all CCNA Security commands: use as a quick, offline resource for research and solutions • Logical how-to topic groupings provide one-stop research • Great for review before CCNA Security certification exams • Compact size makes it easy to carry with you, wherever you go • "Create Your Own Journal" section with blank, lined pages allows you to personalize the book for your needs • "What Do You Want to Do?" chart inside front cover helps you to quickly reference specific tasks This book is part of the Cisco Press® Certification Self-Study Product Family, which offers readers a self-paced study routine for Cisco® certification exams. Titles in the Cisco Press Certification Self-Study Product Family are part of a recommended learning program from Cisco that includes simulation and hands-on training from authorized Cisco Learning Partners and self-study products from Cisco Press.

This book is an excellent choice for any person working in the field of IT or studying for an IT or IT related degree. This book will guide you through all available choices of computer jobs, computer certifications and guide you through the interviewing process. For companies employing IT professionals, this book will provide them with a guide for the different computer jobs descriptions and what professional certifications are required from their employees. This book is the first of its kind to present detailed and valuable information about IT jobs and

their corresponding certifications. We believe that all IT professionals, employment agencies and companies offering IT jobs would benefit from this book.

With a CCNA Security certification, you can demonstrate the skills required to develop a security infrastructure, recognize threats to networks, and mitigate security threats. Geared towards Cisco Security, the practical aspects of this book will help you clear the CCNA Security Exam (210-260) by increasing your knowledge of Network Security.

Developed in collaboration with a training and certification team from Cisco, Computer Network Security is an exploration of the state-of-the-art and good practices in setting up a secure computer system. Concrete examples are offered in each chapter, to help the reader to master the concept and apply the security configuration. This book is intended for students preparing for the CCNA Security Exam (210-260 IINS) ? whether at professional training centers, technical faculties, or training centers associated with the Cisco Academy program. It is also relevant to anyone interested in computer security, be they professionals in this field or users who want to identify the threats and vulnerabilities of a network to ensure better security.

Implementing Cisco IOS Network Security (IINS) Foundation Learning Guide Second Edition Foundation learning for the CCNA Security IINS 640-554 exam Implementing Cisco IOS Network Security (IINS) Foundation Learning Guide, Second Edition, is a Cisco-authorized, self-paced learning tool for CCNA® Security 640-554 foundation learning. This book provides you with the knowledge needed to secure Cisco® networks. By reading this book, you will gain a thorough understanding of how to develop a security infrastructure, recognize threats and vulnerabilities to networks, and mitigate security threats. This book focuses on using Cisco IOS routers to protect the network by capitalizing on their advanced features as a perimeter router, firewall, intrusion prevention system, and site-to-site VPN device. The book also covers the use of Cisco Catalyst switches for basic network security, the Cisco Secure Access Control System (ACS), and the Cisco Adaptive Security Appliance (ASA). You learn how to perform basic tasks to secure a small branch office network using Cisco IOS security features available through web-based GUIs (Cisco Configuration Professional) and the CLI on Cisco routers, switches, and ASAs. Whether you are preparing for CCNA Security certification or simply want to gain a better understanding of Cisco IOS security fundamentals, you will benefit from the information provided in this book. Implementing Cisco IOS Network Security (IINS) Foundation Learning Guide, Second Edition, 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. -- Develop a comprehensive network security policy to counter threats against information security -- Secure borderless networks -- Learn how to use Cisco IOS Network Foundation Protection (NFP) and Cisco Configuration Professional (CCP) -- Securely implement the management and reporting features of Cisco IOS devices -- Deploy Cisco Catalyst Switch security features -- Understand IPv6 security features -- Plan threat control strategies -- Filter traffic with access control lists -- Configure ASA and Cisco IOS zone-based firewalls -- Implement intrusion prevention systems (IPS) and network address translation (NAT) -- Secure connectivity with site-to-site IPsec VPNs and remote access VPNs This volume is in the Foundation Learning Guide Series offered by Cisco Press®. 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. Category: Cisco Certification Covers: CCNA Security IINS exam 640-554

The authoritative visual guide to Cisco Firepower Threat Defense (FTD) This is the definitive guide to best practices and advanced troubleshooting techniques for the Cisco flagship Firepower Threat Defense (FTD) system running on Cisco ASA platforms, Cisco Firepower security appliances, Firepower eXtensible Operating System (FXOS), and VMware virtual appliances. Senior Cisco engineer Nazmul Rajib draws on unsurpassed experience supporting and training Cisco Firepower engineers worldwide, and presenting detailed knowledge of Cisco Firepower deployment, tuning, and troubleshooting. Writing for cybersecurity consultants, service providers, channel partners, and enterprise or government security professionals, he shows how to deploy the Cisco Firepower next-generation security technologies to protect your network from potential cyber threats, and how to use Firepower's robust command-line tools to investigate a wide variety of technical issues. Each consistently organized chapter contains definitions of keywords, operational flowcharts, architectural diagrams, best practices, configuration steps (with detailed screenshots), verification tools, troubleshooting techniques, and FAQs drawn directly from issues raised by Cisco customers at the Global Technical Assistance Center (TAC). Covering key Firepower materials on the CCNA Security, CCNP Security, and CCIE Security exams, this guide also includes end-of-chapter quizzes to help candidates prepare. · Understand the operational architecture of the Cisco Firepower NGFW, NGIPS, and AMP technologies · Deploy FTD on ASA platform and Firepower appliance running FXOS · Configure and troubleshoot Firepower Management Center (FMC) · Plan and deploy FMC and FTD on VMware virtual appliance · Design and implement the Firepower management network on FMC and FTD · Understand and apply Firepower licenses, and register FTD with FMC · Deploy FTD in Routed, Transparent, Inline, Inline Tap, and Passive Modes · Manage traffic flow with detect-only, block, trust, and bypass operations · Implement rate limiting and analyze quality of service (QoS) · Blacklist suspicious IP addresses via Security Intelligence · Block DNS queries to the malicious domains · Filter URLs based on category, risk, and reputation · Discover a network and implement application visibility and control (AVC) · Control file transfers and block malicious files using advanced malware protection (AMP) · Halt cyber attacks using Snort-based intrusion rule · Masquerade an internal host's original IP address using Network Address Translation (NAT) · Capture traffic and obtain troubleshooting files for advanced analysis · Use command-line tools to identify status, trace packet flows, analyze logs, and debug messages

This is the eBook version of the printed book. If the print book includes a CD-ROM, this content is not included within the eBook version. For organizations of all sizes, the Cisco ASA product family offers powerful new tools for maximizing network security. Cisco ASA: All-in-One Firewall, IPS, Anti-X and VPN Adaptive Security Appliance, Second Edition, is Cisco's authoritative practitioner's guide to planning, deploying, managing, and troubleshooting security with Cisco ASA. Written by two leading Cisco security experts, this book presents each Cisco ASA solution in depth, offering comprehensive sample configurations, proven troubleshooting methodologies, and debugging examples. Readers will learn about the Cisco ASA Firewall solution and capabilities; secure configuration and troubleshooting of site-to-site and remote access VPNs; Intrusion Prevention System features built into Cisco ASA's Advanced Inspection and Prevention Security Services Module (AIP-SSM); and Anti-X features in the ASA Content Security and Control Security Services Module (CSC-SSM). This new edition has been updated with detailed information on the latest ASA models and features. Everything network professionals need to know to identify, mitigate, and respond to network attacks with Cisco ASA Includes detailed configuration examples, with screenshots and command line references Covers the ASA 8.2 release Presents complete troubleshooting methodologies and architectural references

A comprehensive guide for deploying, configuring, and troubleshooting NetFlow and learning big data analytics technologies for cyber security Today's world of network security is full of cyber security vulnerabilities, incidents, breaches, and many headaches. Visibility into the network is an indispensable tool for network and security professionals and Cisco NetFlow creates an environment where network administrators and security professionals have the tools to understand who, what, when, where, and how network traffic is flowing. Network Security with NetFlow and IPFIX is a key resource for introducing yourself to and understanding the power behind the Cisco NetFlow solution. Omar Santos, a Cisco Product Security Incident Response Team (PSIRT) technical leader and author of numerous books including the CCNA Security 210-260 Official Cert Guide, details the importance of NetFlow and demonstrates how it can be used by large enterprises and small-to-medium-sized businesses to meet critical network challenges. This book also examines NetFlow's potential as a powerful network

security tool. Network Security with NetFlow and IPFIX explores everything you need to know to fully understand and implement the Cisco Cyber Threat Defense Solution. It also provides detailed configuration and troubleshooting guidance, sample configurations with depth analysis of design scenarios in every chapter, and detailed case studies with real-life scenarios. You can follow Omar on Twitter: @santosomar

NetFlow and IPFIX basics
Cisco NetFlow versions and features
Cisco Flexible NetFlow
NetFlow Commercial and Open Source Software Packages
Big Data Analytics tools and technologies such as Hadoop, Flume, Kafka, Storm, Hive, HBase, Elasticsearch, Logstash, Kibana (ELK)
Additional Telemetry Sources for Big Data Analytics for Cyber Security
Understanding big data scalability
Big data analytics in the Internet of everything
Cisco Cyber Threat Defense and NetFlow Troubleshooting
NetFlow Real-world case studies

Preparing for the latest CCNA Security exam? Here are all the CCNA Security (210-260) commands you need in one condensed, portable resource. Filled with valuable, easy-to-access information, the CCNA Security Portable Command Guide, is portable enough for you to use whether you're in the server room or the equipment closet. Completely updated to reflect the new CCNA Security 210-260 exam, this quick reference summarizes relevant Cisco IOS® Software commands, keywords, command arguments, and associated prompts, and offers tips and examples for applying these commands to real-world security challenges. Configuration examples, throughout, provide an even deeper understanding of how to use IOS to protect networks. Topics covered include Networking security fundamentals: concepts, policies, strategy
Protecting network infrastructure: network foundations, security management planes/access; data planes (Catalyst switches and IPv6)
Threat control/containment: protecting endpoints and content; configuring ACLs, zone-based firewalls, and Cisco IOS IPS
Secure connectivity: VPNs, cryptology, asymmetric encryption, PKI, IPsec VPNs, and site-to-site VPN configuration
ASA network security: ASA/ASDM concepts; configuring ASA basic settings, advanced settings, and VPNs
Access all CCNA Security commands: use as a quick, offline resource for research and solutions
Logical how-to topic groupings provide one-stop research
Great for review before CCNA Security certification exams
Compact size makes it easy to carry with you, wherever you go
"Create Your Own Journal" section with blank, lined pages allows you to personalize the book for your needs
"What Do You Want to Do?" chart inside the front cover helps you to quickly reference specific tasks
This Cisco text offers study tools for Cisco certification exam preparation, with tutorial learning of all topics for the relevant exam and self-assessment pedagogical tools. Chapters are written in modular fashion, breaking down the topics covered into easily absorbed blocks of information.

The essential reference for security pros and CCIE Security candidates: policies, standards, infrastructure/perimeter and content security, and threat protection
Integrated Security Technologies and Solutions – Volume I offers one-stop expert-level instruction in security design, deployment, integration, and support methodologies to help security professionals manage complex solutions and prepare for their CCIE exams. It will help security pros succeed in their day-to-day jobs and also get ready for their CCIE Security written and lab exams. Part of the Cisco CCIE Professional Development Series from Cisco Press, it is authored by a team of CCIEs who are world-class experts in their Cisco security disciplines, including co-creators of the CCIE Security v5 blueprint. Each chapter starts with relevant theory, presents configuration examples and applications, and concludes with practical troubleshooting. Volume 1 focuses on security policies and standards; infrastructure security; perimeter security (Next-Generation Firewall, Next-Generation Intrusion Prevention Systems, and Adaptive Security Appliance [ASA]), and the advanced threat protection and content security sections of the CCIE Security v5 blueprint. With a strong focus on interproduct integration, it also shows how to combine formerly disparate systems into a seamless, coherent next-generation security solution. Review security standards, create security policies, and organize security with Cisco SAFE architecture
Understand and mitigate threats to network infrastructure, and protect the three planes of a network device
Safeguard wireless networks, and mitigate risk on Cisco WLC and access points
Secure the network perimeter with Cisco Adaptive Security Appliance (ASA)
Configure Cisco Next-Generation Firewall
Firepower Threat Defense (FTD) and operate security via Firepower Management Center (FMC)
Detect and prevent intrusions with Cisco Next-Gen IPS, FTD, and FMC
Configure and verify Cisco IOS firewall features such as ZBFW and address translation
Deploy and configure the Cisco web and email security appliances to protect content and defend against advanced threats
Implement Cisco Umbrella
Secure Internet Gateway in the cloud as your first line of defense against internet threats
Protect against new malware with Cisco Advanced Malware Protection and Cisco ThreatGrid

The official, comprehensive assessment, review, and practice guide for Cisco's latest CCNP Security Firewall exam -- direct from Cisco *

- *Covers every new Cisco Firewall exam topic, including connectivity, Cisco ASA management, activity recording, address translation, access control, proxy services, traffic inspection, QoS, virtual firewalls, high availability, and service module integration.
- *CD contains realistic practice tests.
- *Extensive, proven features help students review efficiently and remember key details. This is Cisco's official, comprehensive self-study resource for preparing for the new CCNP Security Firewall exam, one of the four required exams for CCNP Security certification. Designed for intermediate-to-advanced level readers, it covers every objective concisely and logically, with extensive teaching features designed to promote retention and understanding. Readers will find:
- *Pre-chapter quizzes to assess knowledge upfront and focus study more efficiently.
- *Foundation topics sections that explain concepts and configurations, and link theory to actual configuration commands.
- *Key topics sections calling attention to every figure, table, and list that candidates must know.
- *Exam Preparation sections with additional chapter review features.
- *Final preparation chapter providing tools and a complete final study plan.
- *Customizable practice test library on CD-ROM

This book's comprehensive coverage includes:

- *Understanding and working with Cisco ASA.
- *Deploying basic and IP connectivity.
- *Managing ASAs and recording their activities.
- *Using address translation.
- *Controlling access and inspecting traffic.
- *Using Proxy services to control access.
- *Controlling Quality of Service (QoS).
- *Creating Virtual Firewalls.
- *Deploying high availability features.
- *Integrating ASA Service Modules

31 Days Before Your CCNA Security Exam
31 Days Before Your CCNA Security Exam offers you an engaging and practical way to understand the certification process, commit to taking the CCNA Security IINS 210-260 certification exam, and finish your preparation using a variety of Primary and Supplemental study resources. The IINS 210-260 exam tests your knowledge of secure network infrastructure, core security concepts, secure access, VPN encryption, firewalls, intrusion prevention, web/email content security, and endpoint security. It also tests your skills for installing, troubleshooting, and monitoring secure networks to maintain the integrity, confidentiality, and availability of data and devices. Sign up for the IINS 210-260 exam and use the book's day-by-day guide and checklist to organize, prepare, and review. Each day in this guide breaks down an exam topic into a manageable bit of information to review using short summaries. A Study Resources section provides you with a quick reference for locating more in-depth treatment of a day's topics within the Primary and Supplemental resources. The features of the book empower you to fit exam preparation into a busy schedule:

- A visual calendar summarizing each day's study topic
- A checklist providing advice for preparation activities leading up to the exam
- A description of the CCNA Security IINS 210-260 exam organization and sign-up process
- Strategies from the author to be mentally, organizationally, and physically prepared for exam day
- A conversational tone, which makes your study time more enjoyable

Primary Resources: CCNA Security 210-260 Official Cert Guide ISBN-13: 978-1-58720-566-8
CCNA Security Course Booklet Version 2 ISBN-13: 978-1-58713-351-0
CCNA Security Lab Manual Version 2 ISBN-13: 978-1-58713-350-3
Supplemental Resources: CCNA Security 210-260

Complete Video Course ISBN-13: 978-0-13-449931-4 CCNA Security Portable Command Guide, Second Edition
ISBN-13: 978-1-58720-575-0 Cisco ASA: All-in-One Next-Generation Firewall, IPS, and VPN Services, Third Edition
ISBN-13: 978-1-58714-307-6 Category: Certification Covers: CCNA Security

Begin a successful career in cybersecurity operations by achieving Cisco Certified CyberOps Associate 200-201 certification Key Features Receive expert guidance on how to kickstart your career in the cybersecurity industry Gain hands-on experience while studying for the Cisco Certified CyberOps Associate certification exam Work through practical labs and exercises mapped directly to the exam objectives Book Description Achieving the Cisco Certified CyberOps Associate 200-201 certification helps you to kickstart your career in cybersecurity operations. This book offers up-to-date coverage of 200-201 exam resources to fully equip you to pass on your first attempt. The book covers the essentials of network security concepts and shows you how to perform security threat monitoring. You'll begin by gaining an in-depth understanding of cryptography and exploring the methodology for performing both host and network-based intrusion analysis. Next, you'll learn about the importance of implementing security management and incident response strategies in an enterprise organization. As you advance, you'll see why implementing defenses is necessary by taking an in-depth approach, and then perform security monitoring and packet analysis on a network. You'll also discover the need for computer forensics and get to grips with the components used to identify network intrusions. Finally, the book will not only help you to learn the theory but also enable you to gain much-needed practical experience for the cybersecurity industry. By the end of this Cisco cybersecurity book, you'll have covered everything you need to pass the Cisco Certified CyberOps Associate 200-201 certification exam, and have a handy, on-the-job desktop reference guide. What you will learn Incorporate security into your architecture to prevent attacks Discover how to implement and prepare secure designs Identify access control models for digital assets Identify point of entry, determine scope, contain threats, and remediate Find out how to perform malware analysis and interpretation Implement security technologies to detect and analyze threats Who this book is for This book is for students who want to pursue a career in cybersecurity operations, threat detection and analysis, and incident response. IT professionals, network security engineers, security operations center (SOC) engineers, and cybersecurity analysts looking for a career boost and those looking to get certified in Cisco cybersecurity technologies and break into the cybersecurity industry will also benefit from this book. No prior knowledge of IT networking and cybersecurity industries is needed.

Cisco ASA, PIX, and FWSM Firewall Handbook, Second Edition, is a guide for the most commonly implemented features of the popular Cisco® firewall security solutions. Fully updated to cover the latest firewall releases, this book helps you to quickly and easily configure, integrate, and manage the entire suite of Cisco firewall products, including ASA, PIX®, and the Catalyst® Firewall Services Module (FWSM). Organized by families of features, this book helps you get up to speed quickly and efficiently on topics such as file management, building connectivity, controlling access, firewall management, increasing availability with failover, load balancing, logging, and verifying operation. Sections are marked by shaded tabs for quick reference, and information on each feature is presented in a concise format, with background, configuration, and example components. Whether you are looking for an introduction to the latest ASA, PIX, and FWSM devices or a complete reference for making the most out of your Cisco firewall deployments, Cisco ASA, PIX, and FWSM Firewall Handbook, Second Edition, helps you achieve maximum protection of your network resources. “Many books on network security and firewalls settle for a discussion focused primarily on concepts and theory. This book, however, goes well beyond these topics. It covers in tremendous detail the information every network and security administrator needs to know when configuring and managing market-leading firewall products from Cisco.” —Jason Nolet, Vice President of Engineering, Security Technology Group, Cisco David Hucaby, CCIE® No. 4594, is a lead network engineer for the University of Kentucky, where he works with health-care networks based on the Cisco Catalyst, ASA, FWSM, and VPN product lines. He was one of the beta reviewers of the ASA 8.0 operating system software. Learn about the various firewall models, user interfaces, feature sets, and configuration methods Understand how a Cisco firewall inspects traffic Configure firewall interfaces, routing, IP addressing services, and IP multicast support Maintain security contexts and flash and configuration files, manage users, and monitor firewalls with SNMP Authenticate, authorize, and maintain accounting records for firewall users Control access through the firewall by implementing transparent and routed firewall modes, address translation, and traffic shunning Define security policies that identify and act on various types of traffic with the Modular Policy Framework Increase firewall availability with firewall failover operation Understand how firewall load balancing works Generate firewall activity logs and learn how to analyze the contents of the log Verify firewall operation and connectivity and observe data passing through a firewall Configure Security Services Modules, such as the Content Security Control (CSC) module and the Advanced Inspection Processor (AIP) module This security book is part of the Cisco Press® Networking Technology Series. Security titles from Cisco Press help networking professionals secure critical data and resources, prevent and mitigate network attacks, and build end-to-end self-defending networks. Category: Networking: Security Covers: Cisco ASA 8.0, PIX 6.3, and FWSM 3.2 version firewalls

SSL Remote Access VPNs An introduction to designing and configuring SSL virtual private networks Jazib Frahim, CCIE® No. 5459 Qiang Huang, CCIE No. 4937 Cisco® SSL VPN solutions (formerly known as Cisco WebVPN solutions) give you a flexible and secure way to extend networking resources to virtually any remote user with access to the Internet and a web browser. Remote access based on SSL VPN delivers secure access to network resources by establishing an encrypted tunnel across the Internet using a broadband (cable or DSL) or ISP dialup connection. SSL Remote Access VPNs provides you with a basic working knowledge of SSL virtual private networks on Cisco SSL VPN-capable devices. Design guidance is provided to assist you in implementing SSL VPN in existing network infrastructures. This includes examining existing hardware and software to determine whether they are SSL VPN capable, providing design recommendations, and guiding you on setting up the Cisco SSL VPN devices. Common deployment scenarios are

covered to assist you in deploying an SSL VPN in your network. SSL Remote Access VPNs gives you everything you need to know to understand, design, install, configure, and troubleshoot all the components that make up an effective, secure SSL VPN solution. Jazib Frahim, CCIE® No. 5459, is currently working as a technical leader in the Worldwide Security Services Practice of the Cisco Advanced Services for Network Security. He is responsible for guiding customers in the design and implementation of their networks, with a focus on network security. He holds two CCIEs, one in routing and switching and the other in security. Qiang Huang, CCIE No. 4937, is a product manager in the Cisco Campus Switch System Technology Group, focusing on driving the security and intelligent services roadmap for market-leading modular Ethernet switching platforms. During his time at Cisco, Qiang has played an important role in a number of technology groups, including the Cisco TAC security and VPN team, where he was responsible for trouble-shooting complicated customer deployments in security and VPN solutions. Qiang has extensive knowledge of security and VPN technologies and experience in real-life customer deployments. Qiang holds CCIE certifications in routing and switching, security, and ISP Dial. Understand remote access VPN technologies, such as Point-to-Point Tunneling Protocol (PPTP), Internet Protocol Security (IPsec), Layer 2 Forwarding (L2F), Layer 2 Tunneling (L2TP) over IPsec, and SSL VPN Learn about the building blocks of SSL VPN, including cryptographic algorithms and SSL and Transport Layer Security (TLS) Evaluate common design best practices for planning and designing an SSL VPN solution Gain insight into SSL VPN functionality on Cisco Adaptive Security Appliance (ASA) and Cisco IOS® routers Install and configure SSL VPNs on Cisco ASA and Cisco IOS routers Manage your SSL VPN deployment using Cisco Security Manager This security book is part of the Cisco Press® Networking Technology Series. Security titles from Cisco Press help networking professionals secure critical data and resources, prevent and mitigate network attacks, and build end-to-end self-defending networks.

Category: Networking: Security Covers: SSL VPNs

Implementing Cisco IOS Network Security (IINS) is a Cisco-authorized, self-paced learning tool for CCNA® Security foundation learning. This book provides you with the knowledge needed to secure Cisco® routers and switches and their associated networks. By reading this book, you will gain a thorough understanding of how to troubleshoot and monitor network devices to maintain integrity, confidentiality, and availability of data and devices, as well as the technologies that Cisco uses in its security infrastructure. This book focuses on the necessity of a comprehensive security policy and how it affects the posture of the network. You will learn how to perform basic tasks to secure a small branch type office network using Cisco IOS® security features available through the Cisco Router and Security Device Manager (SDM) web-based graphical user interface (GUI) and through the command-line interface (CLI) on Cisco routers and switches. The author also provides, when appropriate, parallels with Cisco ASA appliances. Whether you are preparing for CCNA Security certification or simply want to gain a better understanding of Cisco IOS security fundamentals, you will benefit from the information provided in this book. Implementing Cisco IOS Network Security (IINS) 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. Develop a comprehensive network security policy to counter threats against information security Configure routers on the network perimeter with Cisco IOS Software security features Configure firewall features including ACLs and Cisco IOS zone-based policy firewalls to perform basic security operations on a network Configure site-to-site VPNs using Cisco IOS features Configure IPS on Cisco network routers Configure LAN devices to control access, resist attacks, shield other network devices and systems, and protect the integrity and confidentiality of network traffic This volume is in the Certification Self-Study Series offered by Cisco Press®. Books in this series provide officially developed self-study solutions to help networking professionals understand technology implementations and prepare for the Cisco Career Certifications examinations.

Covers the most important and common configuration scenarios and features which will put you on track to start implementing ASA firewalls right away.

As a final exam preparation tool, the CCNP Security VPN 642-648 Quick Reference provides a concise review of all objectives on the new CCNP Security VPN exam (642-648). This eBook provides you with detailed, graphical-based information, highlighting only the key topics in cram-style format. With this document as your guide, you will review topics on deploying Cisco ASA-based VPN solutions. This fact-filled Quick Reference allows you to get all-important information at a glance, helping you to focus your study on areas of weakness and to enhance memory retention of essential exam concepts.

The definitive insider's guide to planning, installing, configuring, and maintaining the new Cisco Adaptive Security Appliance.

The essential guide to understanding and using firewalls to protect personal computers and your network An easy-to-read introduction to the most commonly deployed network security device Understand the threats firewalls are designed to protect against Learn basic firewall architectures, practical deployment scenarios, and common management and troubleshooting tasks Includes configuration, deployment, and management checklists Increasing reliance on the Internet in both work and home environments has radically increased the vulnerability of computing systems to attack from a wide variety of threats. Firewall technology continues to be the most prevalent form of protection against existing and new threats to computers and networks. A full understanding of what firewalls can do, how they can be deployed to maximum effect, and the differences among firewall types can make the difference between continued network integrity and complete network or computer failure. Firewall Fundamentals introduces readers to firewall concepts and explores various commercial and open source firewall implementations--including Cisco, Linksys, and Linux--allowing network administrators and small office/home office computer users to effectively choose and configure their devices. Firewall Fundamentals is written in clear and easy-to-understand language and helps novice users understand what firewalls are and how and where they are used. It introduces various types of firewalls, first conceptually and then by explaining how different firewall implementations actually work. It also provides numerous implementation examples, demonstrating the use of firewalls in both personal and business-related scenarios, and explains how a firewall should be installed and configured. Additionally,

generic firewall troubleshooting methodologies and common management tasks are clearly defined and explained.

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. CCNP Security FIREWALL 642-618 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. Master Cisco CCNP Security FIREWALL exam topics Assess your knowledge with chapter-opening quizzes Review key concepts with exam preparation tasks Practice with realistic exam questions on the CD-ROM CCNP Security FIREWALL 642-618 Official Cert Guide, focuses specifically on the objectives for the CCNP Security FIREWALL exam. Expert networking consultants Dave Hucaby, Dave Garneau, and Anthony Sequeira 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 companion CD-ROM contains a powerful Pearson IT Certification Practice Test engine that enables you to focus on individual topic areas or take a complete, timed exam. The assessment engine also tracks your performance and provides feedback on a module-by-module basis, laying out a complete assessment of your knowledge to help you focus your study where it is needed most. 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 CCNP Security FIREWALL exam, including: ASA interfaces IP connectivity ASA management Recording ASA activity Address translation Access control Proxy services Traffic inspection and handling Transparent firewall mode Virtual firewalls High availability ASA service modules CCNP Security FIREWALL 642-618 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 www.cisco.com/go/authorizedtraining. The print edition of the CCNP Security FIREWALL 642-618 Official Cert Guide contains a free, complete practice exam. Also available from Cisco Press for Cisco CCNP Security study is the CCNP Security FIREWALL 642-618 Official Cert Guide Premium Edition eBook and Practice Test. This digital-only certification preparation product combines an eBook with enhanced Pearson IT Certification Practice Test. This integrated learning package: Allows you to focus on individual topic areas or take complete, timed exams Includes direct links from each question to detailed tutorials to help you understand the concepts behind the questions Provides unique sets of exam-realistic practice questions Tracks your performance and provides feedback on a module-by-module basis, laying out a complete assessment of your knowledge to help you focus your study where it is needed most

Cisco® ASA All-in-One Next-Generation Firewall, IPS, and VPN Services, Third Edition Identify, mitigate, and respond to today's highly-sophisticated network attacks. Today, network attackers are far more sophisticated, relentless, and dangerous. In response, Cisco ASA: All-in-One Next-Generation Firewall, IPS, and VPN Services has been fully updated to cover the newest techniques and Cisco technologies for maximizing end-to-end security in your environment. Three leading Cisco security experts guide you through every step of creating a complete security plan with Cisco ASA, and then deploying, configuring, operating, and troubleshooting your solution. Fully updated for today's newest ASA releases, this edition adds new coverage of ASA 5500-X, ASA 5585-X, ASA Services Module, ASA next-generation firewall services, EtherChannel, Global ACLs, clustering, IPv6 improvements, IKEv2, AnyConnect Secure Mobility VPN clients, and more. The authors explain significant recent licensing changes; introduce enhancements to ASA IPS; and walk you through configuring IPsec, SSL VPN, and NAT/PAT. You'll learn how to apply Cisco ASA adaptive identification and mitigation services to systematically strengthen security in network environments of all sizes and types. The authors present up-to-date sample configurations, proven design scenarios, and actual debugs— all designed to help you make the most of Cisco ASA in your rapidly evolving network. Jazib Frahim, CCIE® No. 5459 (Routing and Switching; Security), Principal Engineer in the Global Security Solutions team, guides top-tier Cisco customers in security-focused network design and implementation. He architects, develops, and launches new security services concepts. His books include Cisco SSL VPN Solutions and Cisco Network Admission Control, Volume II: NAC Deployment and Troubleshooting. Omar Santos, CISSP No. 463598, Cisco Product Security Incident Response Team (PSIRT) technical leader, leads and mentors engineers and incident managers in investigating and resolving vulnerabilities in Cisco products and protecting Cisco customers. Through 18 years in IT and cybersecurity, he has designed, implemented, and supported numerous secure networks for Fortune® 500 companies and the U.S. government. He is also the author of several other books and numerous whitepapers and articles. Andrew Ossipov, CCIE® No. 18483 and CISSP No. 344324, is a Cisco Technical Marketing Engineer focused on firewalls, intrusion prevention, and data center security. Drawing on more than 16 years in networking, he works to solve complex customer technical problems, architect new features and products, and define future directions for Cisco's product portfolio. He holds several pending patents. Understand, install, configure, license, maintain, and troubleshoot the newest ASA devices Efficiently implement Authentication, Authorization, and Accounting (AAA) services Control and provision network access with packet filtering, context-aware Cisco ASA next-generation firewall services, and new NAT/PAT concepts Configure IP routing, application inspection, and QoS Create firewall contexts with unique configurations, interfaces, policies, routing tables, and administration Enable integrated protection against many types of malware and advanced persistent threats (APTs) via Cisco Cloud Web Security and Cisco Security Intelligence Operations (SIO) Implement high availability with failover and elastic scalability with clustering Deploy, troubleshoot, monitor, tune, and manage Intrusion Prevention System (IPS) features Implement site-to-site IPsec VPNs and all forms of remote-access VPNs (IPsec, clientless SSL, and client-based SSL) Configure and troubleshoot Public Key Infrastructure (PKI) Use IKEv2 to more effectively resist attacks against VPNs Leverage IPv6 support for IPS, packet inspection, transparent firewalls, and site-to-site IPsec VPNs This is a best practices course on how to set-up, manage, and troubleshoot firewalls and VPNs using the Cisco ASA (Adaptive Security Appliance). Drawing on his 15 years of experience implementing Cisco firewalls, instructor Jimmy Larsson shows you the actual hands-on commands and configurations he uses in real life situations. The course is targeted at first time Cisco ASA users and those with some ASA experience looking to fill the gaps in their knowledge. Larsson recommends that learners have access to a Cisco firewall in order to practice the methods covered in the course. Gain the practical knowledge required to set-up and manage Cisco firewalls and VPNs Explore ASA hardware models, CLI basics, and core firewall configuration practices Acquire a thorough understanding of how network address translation works Learn basic and advanced methods for configuring the AnyConnect client VPN solution Discover how to configure, manage, and troubleshoot site-to-site VPN tunnels Understand packet capture and how to use troubleshooting tools like Packet Tracer Get exposed to advanced methods for enhancing firewall functionality Jimmy Larsson runs Secyourity AB, a network security company focused on Cisco-based security products and solutions. He's been in IT since 1990 working for companies such as ATEA and LAN Assistans. He's certified in Cisco CCNA Routing & Switching, CCNA Security, CCNP Routing & Switching, CCNP Security, Check Point CCSE, and ISC2 CISSP in Information Security.

As a final exam preparation tool, CCIE Security v3.0 Quick Reference provides a concise review of all objectives on the CCIE Security written exam v3.0 (350-018). This eBook provides you with detailed, graphical-based information, highlighting only the key topics in cram-style format. With this document as your guide, you will review topics on security protocols, encryption, application protocols, security technologies,

Cisco IOS security features, Cisco ASA, security management, wireless security, IPv6 security, security policies, network attack mitigation, and computer forensics. This fact-filled Quick Reference allows you to get all-important information at a glance, helping you to focus your study on areas of weakness and to enhance memory retention of essential exam concepts.

CCIE Security v3.0 Configuration Practice Labs presents you with two full lab scenarios in exam style format to echo the actual eight hour CCIE Security lab exam. This publication gives you the opportunity to put into practice your own extensive theoretical knowledge of the broad range of topics covered on the CCIE Security lab exam to see how they interact with each other on a larger, more complex scale. An "Ask the Proctor" section list of questions for each section helps provide clarity and maintain direction, answering the most common questions candidates ask proctors in the actual exam. After each lab, this eBook lets you compare configurations and routing tables with the required answers. You can also run through a lab de-brief, view configurations, and cut and paste configs into your own lab equipment for testing and verification. The point scoring for each question lets you know if you passed or failed each lab. Developed by the CCIE Security program manager, these comprehensive practice labs that sell for hundreds of dollars elsewhere help make sure you are fully prepared for the grueling CCIE Security lab exam experience.

The easy-to-use guide for learning how to secure networks with the world-class PIX Firewall.

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 CCNP Security FIREWALL 642-618 exam topics Assess your knowledge with chapter-opening quizzes Review key concepts with exam preparation tasks This is the eBook edition of the CCNP Security FIREWALL 642-618 Official Cert Guide. This eBook does not include the companion CD-ROM with practice exam that comes with the print edition. CCNP Security FIREWALL 642-618 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. CCNP Security FIREWALL 642-618 Official Cert Guide, focuses specifically on the objectives for the Cisco CCNP Security FIREWALL exam. Expert networking consultants Dave Hucaby, Dave Garneau, and Anthony Sequeira 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. 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 CCNP Security FIREWALL exam, including: ASA interfaces IP connectivity ASA management Recording ASA activity Address translation Access control Proxy services Traffic inspection and handling Transparent firewall mode Virtual firewalls High availability ASA service modules CCNP Security FIREWALL 642-618 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 www.cisco.com/go/authorizedtraining.

"Richard Deal's gift of making difficult technology concepts understandable has remained constant. Whether it is presenting to a room of information technology professionals or writing books, Richard's communication skills are unsurpassed. As information technology professionals we are faced with overcoming challenges every day...Cisco ASA Configuration is a great reference and tool for answering our challenges." --From the Foreword by Steve Marcinek (CCIE 7225), Systems Engineer, Cisco Systems A hands-on guide to implementing Cisco ASA Configure and maintain a Cisco ASA platform to meet the requirements of your security policy. Cisco ASA Configuration shows you how to control traffic in the corporate network and protect it from internal and external threats. This comprehensive resource covers the latest features available in Cisco ASA version 8.0, and includes detailed examples of complex configurations and troubleshooting. Implement and manage Cisco's powerful, multifunction network adaptive security appliance with help from this definitive guide. Configure Cisco ASA using the command-line interface (CLI) and Adaptive Security Device Manager (ASDM) Control traffic through the appliance with access control lists (ACLs) and object groups Filter Java, ActiveX, and web content Authenticate and authorize connections using Cut-through Proxy (CTP) Use Modular Policy Framework (MPF) to configure security appliance features Perform protocol and application inspection Enable IPsec site-to-site and remote access connections Configure WebVPN components for SSL VPN access Implement advanced features, including the transparent firewall, security contexts, and failover Detect and prevent network attacks Prepare and manage the AIP-SSM and CSC-SSM cards

"This is a best practices course on how to set-up, manage, and troubleshoot firewalls and VPNs using the Cisco ASA (Adaptive Security Appliance). Drawing on his 15 years of experience implementing Cisco firewalls, instructor Jimmy Larsson shows you the actual hands-on commands and configurations he uses in real life situations. The course is targeted at first time Cisco ASA users and those with some ASA experience looking to fill the gaps in their knowledge. Larsson recommends that learners have access to a Cisco firewall in order to practice the methods covered in the course."--Resource description page.

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 official, comprehensive assessment, review, and practice guide for Cisco's latest CCNP Security IPS exam -- direct from Cisco * *Covers every new Cisco IPS exam topic, including Cisco IPS software, supporting devices, sensor installation and maintenance, policies, anomaly-based operation, events, virtualization, high availability, high performance, and hardware configuration *CD contains realistic practice tests. *Includes extensive, proven features to help students review efficiently and remember key details. This is Cisco's official, comprehensive self-study resource for preparing for the new CCNP Security IPS exam, one of the four required exams for CCNP Security certification.

Designed for intermediate-to-advanced level readers, it covers every objective concisely and logically, with extensive teaching features designed to promote retention and understanding. Readers will find: * *Pre-chapter quizzes to assess knowledge and focus study more efficiently. *Foundation topics sections that explain concepts and configurations, and link theory to actual configuration commands. *Key topics sections calling attention to every figure, table, and list that candidates must know. *Exam Preparation sections with additional chapter review features. *Final preparation chapter providing tools and a complete final study plan. *Customizable practice test library on CD-ROM

CCIE Security v4.0 Practice Labs The material covered in CCIE Security v4.0 Practice Labs is designed to help candidates prepare for the CCIE Security exam by providing a complex topology and two practice labs that force problem solving, troubleshooting, and policy design using topics and equipment that are detailed in the official exam documents. Each solution is explained in detail to help reinforce a concept and topic. Tech Notes present other deployment options or enhancements and provide additional practical implementation tips. Initial and Final configuration files that can be cut and pasted onto lab devices for further testing and verification are also included. These labs serve as a practice tool for prospective CCIE Security exam candidates and, through the use of a real-world lab topology and in-depth solutions and technical notes, are also a useful reference for any security professional involved with practical customer deployments that use Cisco products and solutions.

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