

Cisco Network Services Orchestrator Foundation Nso100

Master powerful techniques and approaches for securing IoT systems of all kinds—current and emerging Internet of Things (IoT) technology adoption is accelerating, but IoT presents complex new security challenges. Fortunately, IoT standards and standardized architectures are emerging to help technical professionals systematically harden their IoT environments. In *Orchestrating and Automating Security for the Internet of Things*, three Cisco experts show how to safeguard current and future IoT systems by delivering security through new NFV and SDN architectures and related IoT security standards. The authors first review the current state of IoT networks and architectures, identifying key security risks associated with nonstandardized early deployments and showing how early adopters have attempted to respond. Next, they introduce more mature architectures built around NFV and SDN. You'll discover why these lend themselves well to IoT and IoT security, and master advanced approaches for protecting them. Finally, the authors preview future approaches to improving IoT security and present real-world use case examples. This is an indispensable resource for all technical and security professionals, business security and risk managers, and consultants who are responsible for systems that incorporate or utilize IoT devices, or expect to be responsible for them.

- Understand the challenges involved in securing current IoT networks and architectures
- Master IoT security fundamentals, standards, and modern best practices
- Systematically plan for IoT security
- Leverage Software-Defined Networking (SDN) and Network Function Virtualization (NFV) to harden IoT networks
- Deploy the advanced IoT platform, and use MANO to manage and orchestrate virtualized network functions
- Implement platform security services including identity, authentication, authorization, and accounting
- Detect threats and protect data in IoT environments
- Secure IoT in the context of remote access and VPNs
- Safeguard the IoT platform itself
- Explore use cases ranging from smart cities and advanced energy systems to the connected car
- Preview evolving concepts that will shape the future of IoT security

Part of a series of specialized guides on System Center - this book provides focused drilldown on managing servers. Led by series editor Mitch Tulloch, a team of System Center experts step you through key technical scenarios and management tasks.

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

Dynamic organizations want to accelerate growth while reducing costs. To do so, they must speed the deployment of business applications and adapt quickly to any changes in priorities. Organizations require an IT infrastructure to be easy, efficient, and versatile. The VersaStack solution by Cisco and IBM® can help you accelerate the deployment of your datacenters. It reduces costs by more efficiently managing information and resources while maintaining your ability to adapt to business change. The VersaStack solution combines the innovation of Cisco Unified Computing System (Cisco UCS) Integrated Infrastructure with the efficiency of the IBM Storwize® storage system. The Cisco UCS Integrated Infrastructure includes the Cisco UCS, Cisco Nexus and Cisco MDS switches, and Cisco UCS Director. The IBM Storwize V7000 storage system enhances virtual environments with its Data Virtualization, IBM Real-time Compression™, and IBM Easy Tier® features. These features deliver extraordinary levels of performance and efficiency. The VersaStack solution is Cisco Application Centric Infrastructure (ACI) ready. Your IT team can build, deploy, secure, and maintain applications through a more agile framework. Cisco Intercloud Fabric capabilities help enable the creation of open and highly secure solutions for the hybrid cloud. These solutions accelerate your IT transformation while delivering dramatic improvements in operational efficiency and simplicity. Cisco and IBM are global leaders in the IT industry. The VersaStack solution gives you the opportunity to take advantage of integrated infrastructure solutions that are targeted at enterprise applications, analytics, and cloud solutions. The VersaStack solution is backed by Cisco Validated Designs (CVDs) to provide faster delivery of applications, greater IT efficiency, and less risk. This IBM Redbooks® publication is aimed at experienced storage administrators that are tasked with deploying a VersaStack solution with IBM DB2® High Availability (DB2 HA), IBM Spectrum™ Protect, and IBM Spectrum Control™.

The complete guide to provisioning and managing cloud-based Infrastructure as a Service (IaaS) data center solutions Cloud computing will revolutionize the way IT resources are deployed, configured, and managed for years to come. Service providers and customers each stand to realize tremendous value from this paradigm shift-if they can take advantage of it. Cloud Computing brings together the realistic, start-to-finish guidance they need to plan, implement, and manage cloud solution architectures for tomorrow's virtualized data centers. It introduces cloud 'newcomers' to essential concepts, and offers experienced operations professionals detailed guidance on delivering Infrastructure as a Service (IaaS), Platform as a Service (PaaS), and Software as a Service (SaaS). This book's replicable solutions and fully-tested best

practices will help enterprises, services providers, consultants, and Cisco partners meet the challenge of provisioning end-to-end cloud infrastructures. Drawing on extensive experience working with leading cloud vendors and integrators, the authors present detailed operations workflow examples, proven techniques for operating cloud-based network, compute, and storage infrastructure; a comprehensive management reference architecture; and a complete case study demonstrating rapid, lower-cost solutions design. Cloud Computing will be an indispensable resource for all network/IT professionals and managers involved with planning, implementing, or managing the next generation of cloud computing services.

- Review the key concepts needed to successfully deploy and cloud-based services
- Transition common enterprise design patterns and use cases to the cloud
- Master architectural principles and infrastructure design for 'real-time' managed IT services
- Understand the Cisco approach to cloud-related technologies, systems, and services
- Develop a cloud management architecture using ITIL, TMF, and ITU-TMN standards
- Implement best practices for cloud service provisioning, activation, and management
- Automate cloud infrastructure to simplify service delivery, monitoring and assurance
- Choose and implement the right billing/chargeback approaches for your business
- Design and build IaaS services, from start to finish
- Manage the unique capacity challenges associated with sporadic, real-time demand
- Provide a consistent and optimal cloud user experience

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.

Data Center Virtualization Fundamentals For many IT organizations, today's greatest challenge is to drive more value, efficiency, and utilization from data centers.

Virtualization is the best way to meet this challenge. **Data Center Virtualization Fundamentals** brings together the comprehensive knowledge Cisco professionals need to apply virtualization throughout their data center environments. Leading data center expert Gustavo A. A. Santana thoroughly explores all components of an end-to-end data center virtualization solution, including networking, storage, servers, operating systems, application optimization, and security. Rather than focusing on a single product or technology, he explores product capabilities as interoperable design tools that can be combined and integrated with other solutions, including VMware vSphere. With the author's guidance, you'll learn how to define and implement highly-efficient architectures for new, expanded, or retrofit data center projects. By doing so, you can deliver agile application provisioning without purchasing unnecessary infrastructure, and establish a strong foundation for new cloud computing and IT-as-a-service initiatives. Throughout, Santana illuminates key theoretical concepts through realistic use cases, real-world designs, illustrative configuration examples, and verification outputs. Appendixes provide valuable reference information, including relevant Cisco data center products and CLI principles for IOS and NX-OS. With this approach, **Data Center Virtualization Fundamentals** will be an indispensable resource for anyone preparing for the CCNA Data Center, CCNP Data Center, or CCIE Data Center certification exams. Gustavo A. A. Santana, CCIE No. 8806, is a Cisco Technical Solutions Architect working in enterprise and service provider data center projects that require deep integration across technology areas such as networking, application optimization, storage, and servers. He has more than 15 years of data center

experience, and has led and coordinated a team of specialized Cisco engineers in Brazil. He holds two CCIE certifications (Routing & Switching and Storage Networking), and is a VMware Certified Professional (VCP) and SNIA Certified Storage Networking Expert (SCSN-E). A frequent speaker at Cisco and data center industry events, he blogs on data center virtualization at gustavoasantana.net. Learn how virtualization can transform and improve traditional data center network topologies Understand the key characteristics and value of each data center virtualization technology Walk through key decisions, and transform choices into architecture Smoothly migrate existing data centers toward greater virtualization Burst silos that have traditionally made data centers inefficient Master foundational technologies such as VLANs, VRF, and virtual contexts Use virtual PortChannel and FabricPath to overcome the limits of STP Optimize cabling and network management with fabric extender (FEX) virtualized chassis Extend Layer 2 domains to distant data center sites using MPLS and Overlay Transport Virtualization (OTV) Use VSANs to overcome Fibre Channel fabric challenges Improve SAN data protection, environment isolation, and scalability Consolidate I/O through Data Center Bridging and FCoE Use virtualization to radically simplify server environments Create server profiles that streamline "bare metal" server provisioning "Transcend the rack" through virtualized networking based on Nexus 1000V and VM-FEX Leverage opportunities to deploy virtual network services more efficiently Evolve data center virtualization toward full-fledged private clouds -Reviews -

"The variety of material that Gustavo covers in this work would appeal to anyone responsible for Data Centers today. His grasp of virtualization technologies and ability to relate it in both technical and non-technical terms makes for compelling reading. This is not your ordinary tech manual. Through use of relatable visual cues, Gustavo provides information that is easily recalled on the subject of virtualization, reaching across Subject Matter Expertise domains. Whether you consider yourself well-versed or a novice on the topic, working in large or small environments, this work will provide a clear understanding of the diverse subject of virtualization." -- Bill Dufresne, CCIE 4375, Distinguished Systems Engineer, Cisco (Americas) "..this book is an essential reference and will be valuable asset for potential candidates pursuing their Cisco Data Center certifications. I am confident that in reading this book, individuals will inevitably gain extensive knowledge and hands-on experience during their certification preparations. If you're looking for a truly comprehensive guide to virtualization, this is the one!" -- Yusuf Bhajji, Senior Manager, Expert Certifications (CCIE, CCDE, CCAr), Learning@Cisco "When one first looks at those classic Cisco Data Center blueprints, it is very common to become distracted with the overwhelming number of pieces and linkages. By creating a solid theoretical foundation and providing rich sets of companion examples to illustrate each concept, Gustavo's book brings hope back to IT Professionals from different areas of expertise. Apparently complex topics are demystified and the insertion of products, mechanisms, protocols and technologies in the overall Data Center Architecture is clearly explained, thus enabling you to achieve robust designs and successful deployments. A must read... Definitely!" -- Alexandre M. S. P. Moraes, Consulting Systems Engineer -- Author of "Cisco Firewalls"

Explore the emerging definitions, protocols, and standards for SDN—software-defined, software-driven, programmable networks—with this comprehensive guide. Two senior network engineers show you what's required for building networks that use software for

bi-directional communication between applications and the underlying network infrastructure. This vendor-agnostic book also presents several SDN use cases, including bandwidth scheduling and manipulation, input traffic and triggered actions, as well as some interesting use cases around big data, data center overlays, and network-function virtualization. Discover how enterprises and service providers alike are pursuing SDN as it continues to evolve. Explore the current state of the OpenFlow model and centralized network control Delve into distributed and central control, including data plane generation Examine the structure and capabilities of commercial and open source controllers Survey the available technologies for network programmability Trace the modern data center from desktop-centric to highly distributed models Discover new ways to connect instances of network-function virtualization and service chaining Get detailed information on constructing and maintaining an SDN network topology Examine an idealized SDN framework for controllers, applications, and ecosystems

The software and networking industry is experiencing a rapid development and deployment of Network Functions Virtualization (NFV) technology, in both enterprise and cloud data center networks. One of the primary reasons for this technological trend is that NFV has the capability to reduce CAPEX and OPEX, whilst increasing networking service efficiency, performance, agility, scalability, and resource utilization. Despite such well-recognized benefits, security remains a major concern of network service providers and seriously impedes the further expansion of NFV. This book is therefore dedicated to investigating and exploring the potential security issues of NFV. It contains three major elements: a thorough overview of the NFV framework and architecture, a comprehensive threat analysis aiming to establish a layer-specific threat taxonomy for NFV enabled networking services, and a series of comparative studies of security best practices in traditional networking scenarios and in NFV, ultimately leading to a set of recommendations on security countermeasures in NFV. This book is primarily intended for engineers, engineering students and researchers and those with an interest in the field of networks and telecommunications (architectures, protocols, services) in general, and particularly software-defined network (SDN) and network functions virtualization (NFV)-based security services. Extensively studies security issues in NFV Presents a basis or guideline for both academia researchers and industry practitioners to work together to achieve secure and dependable lifecycle management of NFV based network services

Improve Manageability, Flexibility, Scalability, and Control with Hyperconverged Infrastructure Hyperconverged infrastructure (HCI) combines storage, compute, and networking in one unified system, managed locally or from the cloud. With HCI, you can leverage the cloud's simplicity, flexibility, and scalability without losing control or compromising your ability to scale. In Hyperconverged Infrastructure Data Centers, best-selling author Sam Halabi demystifies HCI technology, outlines its use cases, and compares solutions from a vendor-neutral perspective. He guides you through evaluation, planning, implementation, and management, helping you decide where HCI makes sense, and how to migrate legacy data centers without disrupting production systems. The author brings together all the HCI knowledge technical professionals and IT managers need, whether their background is in storage, compute, virtualization, switching/routing, automation, or public cloud platforms. He explores leading solutions including the Cisco HyperFlex platform, VMware vSAN, Nutanix Enterprise Cloud, Cisco Application-Centric Infrastructure (ACI), VMware's NSX, the open source OpenStack

and Open vSwitch (OVS) / Open Virtual Network (OVN), and Cisco CloudCenter for multicloud management. As you explore discussions of automation, policy management, and other key HCI capabilities, you'll discover powerful new opportunities to improve control, security, agility, and performance. Understand and overcome key limits of traditional data center designs Discover improvements made possible by advances in compute, bus interconnect, virtualization, and software-defined storage Simplify rollouts, management, and integration with converged infrastructure (CI) based on the Cisco Unified Computing System (UCS) Explore HCI functionality, advanced capabilities, and benefits Evaluate key HCI applications, including DevOps, virtual desktops, ROBO, edge computing, Tier 1 enterprise applications, backup, and disaster recovery Simplify application deployment and policy setting by implementing a new model for provisioning, deployment, and management Plan, integrate, deploy, provision, manage, and optimize the Cisco HyperFlex hyperconverged infrastructure platform Assess alternatives such as VMware vSAN, Nutanix, open source OpenStack, and OVS/OVN, and compare architectural differences with HyperFlex Compare Cisco ACI (Application-Centric Infrastructure) and VMware NSX approaches to network automation, policies, and security 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.

Designing for Cisco Network Service Architectures (ARCH) Foundation Learning Guide, Fourth Edition · Learn about the Cisco modular enterprise architecture · Create highly available enterprise network designs · Develop optimum Layer 3 designs · Examine advanced WAN services design considerations · Evaluate data center design considerations · Design effective modern WAN and data center designs · Develop effective migration approaches to IPv6 · Design resilient IP multicast networks · Create effective network security designs Designing for Cisco Network Service Architectures (ARCH) Foundation Learning Guide , Fourth Edition, is a Cisco-authorized, self-paced learning tool for CCDP foundation learning. This book provides you with the knowledge needed to perform the conceptual, intermediate, and detailed design of a network infrastructure that supports desired network solutions over intelligent network services to achieve effective performance, scalability, and availability. This book presents concepts and examples necessary to design converged enterprise networks. You learn additional aspects of modular campus design, advanced routing designs, WAN service designs, enterprise data center design, IP multicast design, and security design. Advanced and modern network infrastructure solutions, such as virtual private networks (VPN), Cisco Intelligent WAN (IWAN), and Cisco Application-Centric Infrastructure (ACI), are also covered. Chapter-ending review questions illustrate and help solidify the concepts presented in the book. Whether you are preparing for CCDP certification or CCDE certification, or simply want to gain a better understanding of designing scalable and reliable network architectures, you will benefit from the foundation information presented in this book. Designing for Cisco Network Service Architectures (ARCH) Foundation Learning Guide, Fourth 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 <https://learningnetwork.cisco.com>. Category: Cisco Certification Covers: CCDP ARCH 300-320

For more than 40 years, Computerworld has been the leading source of technology news and information for IT influencers worldwide. Computerworld's award-winning Web site (Computerworld.com), twice-monthly publication, focused conference series and custom research form the hub of the world's largest global IT media network.

Ten Strategies of a World-Class Cyber Security Operations Center conveys MITRE's accumulated expertise on enterprise-grade computer network defense. It covers ten key

qualities of leading Cyber Security Operations Centers (CSOCs), ranging from their structure and organization, to processes that best enable smooth operations, to approaches that extract maximum value from key CSOC technology investments. This book offers perspective and context for key decision points in structuring a CSOC, such as what capabilities to offer, how to architect large-scale data collection and analysis, and how to prepare the CSOC team for agile, threat-based response. If you manage, work in, or are standing up a CSOC, this book is for you. It is also available on MITRE's website, www.mitre.org.

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 and CCIE Security Core SCOR 350-701 exam topics Assess your knowledge with chapter-opening quizzes Review key concepts with exam preparation tasks This is the eBook edition of the CCNP and CCIE Security Core SCOR 350-701 Official Cert Guide. This eBook does not include access to the companion website with practice exam that comes with the print edition. CCNP and CCIE Security Core SCOR 350-701 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 allow 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 and CCIE Security Core SCOR 350-701 Official Cert Guide, focuses specifically on the objectives for the Cisco CCNP and CCIE Security SCOR exam. Best-selling author and leading security engineer Omar Santos 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 allow you to succeed on the exam the first time. The official study guide helps you master all the topics on the CCNP and CCIE Security SCOR 350-701 exam, including: Cybersecurity fundamentals Cryptography Software-Defined Networking security and network programmability Authentication, Authorization, Accounting (AAA) and Identity Management Network visibility and segmentation Infrastructure security Cisco next-generation firewalls and intrusion prevention systems Virtual Private Networks (VPNs) Securing the cloud Content security Endpoint protection and detection CCNP and CCIE Security Core SCOR 350-701 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/web/learning/index.html

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 Data Center Application Centric Infrastructure DCACI 300-620 Official Cert Guide presents you with an organized test-preparation routine using 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 CCNP Data Center Application Centric Infrastructure DCACI 300-620 exam topics * Assess your knowledge with chapter-opening quizzes * Review key concepts with exam preparation tasks * Practice with realistic exam questions in the practice test software CCNP Data Center

Application Centric Infrastructure DCACI 300-620 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. Leading Cisco data center technology expert Ammar Ahmadi 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 study package includes *

- * A test-preparation routine proven to help you pass the exams
- * Do I Know This Already? quizzes, which enable you to decide how much time you need to spend on each section
- * Chapter-ending exercises, which help you drill on key concepts you must know thoroughly
- * The powerful Pearson Test Prep Practice Test software, with two full exams comprised of well-reviewed, exam-realistic questions, customization options, and detailed performance reports
- * A final preparation chapter, which guides you through tools and resources to help you craft your review and test-taking strategies
- * Study plan suggestions and templates to help you organize and optimize your study time
- * Video mentoring from the author's Complete Video Course

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. This official study guide helps you master all the topics on the CCNP Data Center Application Centric Infrastructure DCACI 300-620 exam. It tests your knowledge of Cisco switches in ACI mode, including - ACI fabric infrastructure - ACI packet forwarding - External network connectivity - Integrations - ACI management - ACI Anywhere Companion Website: The companion website contains two full practice exams, an interactive Flash Cards application, video mentoring from the author's Complete Video Course, and much more. Includes Exclusive Offers for Up to 80% Off Video Training, Practice Tests, and more Pearson Test Prep online system requirements: Browsers: Chrome version 40 and above; Firefox version 35 and above; Safari version 7; Internet Explorer 10, 11; Microsoft Edge; Opera. Devices: Desktop and laptop computers, tablets running on Android and iOS, smartphones with a minimum screen size of 4.7". Internet access required. Pearson Test Prep offline system requirements: Windows 10, Windows 8.1, Windows 7; Microsoft .NET Framework 4.5 Client; Pentium-class 1 GHz 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 Also available from Cisco Press for CCNP Data Center DCACI study is the CCNP Data Center Application Centric Infrastructure DCACI 300-620 Official Cert Guide Premium Edition eBook and Practice Test. This digital-only certification preparation product combines an eBook with enhanced Pearson Test Prep 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

By containerizing applications and network services, you can achieve unprecedented levels of network agility and efficiency. Cisco IOS-XE, IOS-XR, and NX-OS Architecture have been augmented with compute virtualization capabilities to accommodate both native and third-party container hosting, empowering organizations to containerize and instantiate any application or network service. Direct from Cisco, Containers in Cisco IOS-XE, IOS-XR, and NX-OS: Orchestration and Operation is the complete guide to deploying and operating "containerized" application and network services in Cisco platforms. The authors begin by reviewing the virtualization and containerization concepts network professionals need to know, and introducing today's leading orchestration tools. Next, they take a deep dive into container networking, introducing Cisco architectural support for container infrastructures. You'll find modular coverage of characteristics, configuration, and operations for each key Cisco software platform: IOS-XE, IOS-XR, and NX-OS. A full chapter on developer tools and resources shows

how to build container images with Docker, and introduces Cisco's toolkits, APIs, NX-SDK or Open Access Containers (OAC), telemetry, Nexus Data Broker, management tools, Puppet, Chef, Ansible, and more. The authors conclude with multiple use cases, showing how users in diverse markets can drive value with containers.

Designing Networks and Services for the Cloud Delivering business-grade cloud applications and services A rapid, easy-to-understand approach to delivering a secure, resilient, easy-to-manage, SLA-driven cloud experience Designing Networks and Services for the Cloud helps you understand the design and architecture of networks and network services that enable the delivery of business-grade cloud services. Drawing on more than 40 years of experience in network and cloud design, validation, and deployment, the authors demonstrate how networks spanning from the Enterprise branch/HQ and the service provider Next-Generation Networks (NGN) to the data center fabric play a key role in addressing the primary inhibitors to cloud adoption—security, performance, and management complexity. The authors first review how virtualized infrastructure lays the foundation for the delivery of cloud services before delving into a primer on clouds, including the management of cloud services. Next, they explore key factors that inhibit enterprises from moving their core workloads to the cloud, and how advanced networks and network services can help businesses migrate to the cloud with confidence. You'll find an in-depth look at data center networks, including virtualization-aware networks, virtual network services, and service overlays. The elements of security in this virtual, fluid environment are discussed, along with techniques for optimizing and accelerating the service delivery. The book dives deeply into cloud-aware service provider NGNs and their role in flexibly connecting distributed cloud resources, ensuring the security of provider and tenant resources, and enabling the optimal placement of cloud services. The role of Enterprise networks as a critical control point for securely and cost-effectively connecting to high-performance cloud services is explored in detail before various parts of the network finally come together in the definition and delivery of end-to-end cloud SLAs. At the end of the journey, you preview the exciting future of clouds and network services, along with the major upcoming trends. If you are a technical professional or manager who must design, implement, or operate cloud or NGN solutions in enterprise or service-provider environments, this guide will be an indispensable resource.

- * Understand how virtualized data-center infrastructure lays the groundwork for cloud-based services
- * Move from distributed virtualization to "IT-as-a-service" via automated self-service portals
- * Classify cloud services and deployment models, and understand the actors in the cloud ecosystem
- * Review the elements, requirements, challenges, and opportunities associated with network services in the cloud
- * Optimize data centers via network segmentation, virtualization-aware networks, virtual network services, and service overlays
- * Systematically secure cloud services
- * Optimize service and application performance
- * Plan and implement NGN infrastructure to support and accelerate cloud services
- * Successfully connect enterprises to the cloud
- * Define and deliver on end-to-end cloud SLAs
- * Preview the future of cloud and network services

For more than 20 years, Network World has been the premier provider of information, intelligence and insight for network and IT executives responsible for the digital nervous systems of large organizations. Readers are responsible for designing, implementing and managing the voice, data and video systems their companies use to support everything from business critical applications to employee collaboration and electronic commerce.

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.

"Every developer working with the Web needs to read this book." -- David Heinemeier Hansson, creator of the Rails framework "RESTful Web Services finally provides a practical roadmap for constructing services that embrace the Web, instead of trying to route around it." -- Adam Trachtenberg, PHP author and EBay Web Services Evangelist You've built web sites that can be used by humans. But can you also build web sites that are usable by machines? That's where the future lies, and that's what RESTful Web Services shows you how to do. The World Wide Web is the most popular distributed application in history, and Web services and mashups have turned it into a powerful distributed computing platform. But today's web service technologies have lost sight of the simplicity that made the Web successful. They don't work like the Web, and they're missing out on its advantages. This book puts the "Web" back into web services. It shows how you can connect to the programmable web with the technologies you already use every day. The key is REST, the architectural style that drives the Web. This book: Emphasizes the power of basic Web technologies -- the HTTP application protocol, the URI naming standard, and the XML markup language Introduces the Resource-Oriented Architecture (ROA), a common-sense set of rules for designing RESTful web services Shows how a RESTful design is simpler, more versatile, and more scalable than a design based on Remote Procedure Calls (RPC) Includes real-world examples of RESTful web services, like Amazon's Simple Storage Service and the Atom Publishing Protocol Discusses web service clients for popular programming languages Shows how to implement RESTful services in three popular frameworks -- Ruby on Rails, Restlet (for Java), and Django (for Python) Focuses on practical issues: how to design and implement RESTful web services and clients This is the first book that applies the REST design philosophy to real web services. It sets down the best practices you need to make your design a success, and the techniques you need to turn your design into working code. You can harness the power of the Web for programmable applications: you just have to work with the Web instead of against it. This book shows you how.

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/CCIE ENCOR exam topics * Assess your knowledge with chapter-opening quizzes * Review key concepts with exam preparation tasks This is the eBook edition of the CCNP and CCIE Enterprise Core ENCOR 350-401 Official Cert Guide. This eBook does not include access to the Pearson Test Prep practice exams that comes with the print edition. CCNP and CCIE Enterprise Core ENCOR 350-401 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 and CCIE Enterprise Core ENCOR 350-401 Official Cert Guide focuses specifically on

the objectives for the Cisco CCNP/CCIE ENCOR 350-401 exam. Networking experts Brad Edgeworth, Ramiro Garza Rios, Dave Hucaby, and Jason Gooley 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. This complete study package includes*

- * A test-preparation routine proven to help you pass the exams
- * Do I Know This Already? quizzes, which enable you to decide how much time you need to spend on each section
- * Chapter-ending exercises, which help you drill on key concepts you must know thoroughly
- * Practice exercises that help you enhance your knowledge
- * More than 90 minutes of video mentoring from the author
- * A final preparation chapter, which guides you through tools and resources to help you craft your review and test-taking strategies
- * Study plan suggestions and templates to help you organize and optimize your study time

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/CCIE ENCOR exam, including

- * Enterprise network architecture
- * Virtualization
- * Network assurance
- * Security
- * Automation

A practical guide to building programmable networks using OpenDaylight

About This Book

Learn and understand how SDN controllers operate and integrate with networks; this book's step-by-step tutorials will give you a strong foundation in SDN, NVF, and OpenDayLight. Learn how to map legacy Layer 2/3 networking technologies in the SDN world Add new services and capabilities to your infrastructure and quickly adopt SDN and NFV within your organization with OpenDayLight. Integrate and manage software-defined networks efficiently in your organization. Build innovative network applications with OpenDayLight and save time and resources. Who This Book Is For This book targets network engineers, network programmers and developers, administrators, and anyone with some level of networking experience who'd like to deploy OpenDayLight effectively. Familiarity with the day-to-day operations of computer networks is expected

What You Will Learn

- Transition from legacy networking to software-defined networking
- Learn how SDN controllers work and manage a network using southbound and northbound APIs
- Learn how to deploy the OpenDayLight SDN controller and integrate it with virtual switches
- Understand the basic design and operation of the OpenDaylight platform
- Build simple MD-SAL OpenDaylight applications
- Build applications on top of OpenDayLight to trigger network changes based on different events
- Integrate OpenStack with OpenDayLight to build a fully managed network
- Learn how to build a software-defined datacenter using NFV and service-chaining technologies

In Detail

OpenDaylight is an open source, software-defined network controller based on standard protocols. It aims to accelerate the adoption of Software-Defined Networking (SDN) and create a solid foundation for Network Functions Virtualization (NFV). SDN is a vast subject; many network engineers find it difficult to get started with using and operating different SDN platforms. This book will give you a practical bridge from SDN theory to the practical, real-world use of SDN in datacenters and by cloud providers. The book will help you understand the features and use cases for SDN, NFV, and OpenDaylight. NFV uses virtualization concepts and techniques to create virtual classes for node functions. Used together, SDN and NFV can elevate the standards of your network architecture; generic hardware-saving costs and the advanced and abstracted software will give you the freedom to evolve your network in the future without having to invest more in costly equipment. By the end of this book, you will have learned how to design and deploy OpenDaylight networks and integrate them with physical network switches. You will also have mastered basic network programming over the SDN fabric.

Style and approach

This is a step-by-step tutorial aimed at getting you up-to-speed with OpenDayLight and ready to adopt it for your SDN (Software-Defined Networking) and NFV (Network Functions Virtualization) ecosystem.

DevNet Associate DEVASC 200-901 Official Certification Guide is Cisco's official, comprehensive self-study resource for Cisco's DEVASC 200-901 exam: your pathway to the DevNet Associate Certification demonstrating your knowledge of application development and automation on Cisco platforms. Written by Cisco experts based on Cisco's own internal training, it clearly explains the value of each technique, presents realistic use cases, introduces solution components, illuminates their inner workings, and shows how to execute on what you've learned in practice. Designed for all Cisco DevNet Associate candidates, it covers every DEVASC 200-901 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 This guide offers comprehensive, up-to-date coverage of all DEVASC 200-901 topics related to: Software development and design Understanding and using APIs Cisco platforms and development Application deployment and security Infrastructure and automation Network fundamentals

This book provides a technical description of cloud computing technologies, covering cloud infrastructure and platform services. It then addresses the basics of operating a Cloud computing data center, the services offered from Cloud providers, the carrier role in connecting users to data centers, and the process of interconnecting Cloud data centers to form a flexible processing unit. It also describes how cloud computing has made an impact in various industries and provides emerging technologies that are critical within each industry. Lastly, this book will address security requirements and provide the best practices in securing data.

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

Network Functions Virtualization (NFV) will drive dramatic cost reductions while also accelerating service delivery. Using NFV with SDN, network owners can provision new functions rapidly on demand, improve scalability, and leverage microservices. Benefits like these will make NFV indispensable for service providers, mobile operators, telcos, and enterprises alike. Network Functions Virtualization (NFV) with a Touch of SDN is the first practical introduction to NFV's fundamental concepts, techniques, and use cases. Written for wide audiences of network engineers, architects, planners, and operators, it assumes no previous knowledge of NFV architecture, deployment, or management. The authors first explain how virtualization, VMs, containers, and related technologies establish the foundation for the NFV transformation. Next, they show how these concepts and technologies can be applied to virtualize network functions in the cloud, data centers, routing, security, and the mobile packet core. You'll discover new tools and techniques for managing and orchestrating virtualized network devices, and gain new clarity on how SDN and NFV interact and interrelate. By the time you're done, you'll be ready to assess vendor claims, evaluate architectures, and plan NFV's role in your own networks. Understand NFV's key benefits and market drivers Review how virtualization makes NFV possible Consider key issues associated with NFV network design and deployment Integrate NFV into existing network designs

Orchestrate, build, and deploy NFV networks and cloud services Maximize operational efficiency by building more programmable, automated networks Understand how NFV and SDN work together Address security, programmability, performance, and service function chaining Preview evolving concepts that will shape NFV's future

Improve operations and agility in any data center, campus, LAN, or WAN Today, the best way to stay in control of your network is to address devices programmatically and automate network interactions. In this book, Cisco experts Ryan Tischer and Jason Gooley show you how to do just that. You'll learn how to use programmability and automation to solve business problems, reduce costs, promote agility and innovation, handle accelerating complexity, and add value in any data center, campus, LAN, or WAN. The authors show you how to create production solutions that run on or interact with Nexus NX-OS-based switches, Cisco ACI, Campus, and WAN technologies. You'll learn how to use advanced Cisco tools together with industry-standard languages and platforms, including Python, JSON, and Linux. The authors demonstrate how to support dynamic application environments, tighten links between apps and infrastructure, and make DevOps work better. This book will be an indispensable resource for network and cloud designers, architects, DevOps engineers, security specialists, and every professional who wants to build or operate high-efficiency networks. Drive more value through programmability and automation, freeing resources for high-value innovation Move beyond error-prone, box-by-box network management Bridge management gaps arising from current operational models Write NX-OS software to run on, access, or extend your Nexus switch Master Cisco's powerful on-box automation and operation tools Manage complex WANs with NetConf/Yang, ConfD, and Cisco SDN Controller Interact with and enhance Cisco Application Centric Infrastructure (ACI) Build self-

service catalogs to accelerate application delivery Find resources for deepening your expertise in network automation

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

This book constitutes the thoroughly refereed post-conference proceedings of the 4th International Conference on Mobile, Secure, and Programmable Networking, held in Paris, France, in June 2018. The 27 papers presented in this volume were carefully reviewed and selected from 52 submissions. They discuss new trends in networking infrastructures, security, services and applications while focusing on virtualization and cloud computing for networks, network programming, software defined networks (SDN) and their security.

The Internet of Things offers massive societal and economic opportunities while at the same time significant challenges, not least the delivery and management of the technical infrastructure underpinning it, the deluge of data generated from it, ensuring privacy and security, and capturing value from it. This Open Access Pivot explores these challenges, presenting the state of the art and future directions for research but also frameworks for making sense of this complex area. This book provides a variety of perspectives on how technology innovations such as fog, edge and dew computing, 5G networks, and distributed intelligence are making us rethink conventional cloud computing to support the Internet of Things. Much of this book focuses on technical aspects of the Internet of Things, however, clear methodologies for mapping the business value of the Internet of Things are still missing. We provide a value mapping

framework for the Internet of Things to address this gap. While there is much hype about the Internet of Things, we have yet to reach the tipping point. As such, this book provides a timely entrée for higher education educators, researchers and students, industry and policy makers on the technologies that promise to reshape how society interacts and operates. Theo Lynn is Full Professor of Digital Business at DCU Business School, Ireland and Director of the Irish Institute of Digital Business. John G. Mooney is Associate Professor of Information Systems and Technology Management at the Pepperdine Graziadio Business School, United States. Brian Lee is Director of the Software Research Institute at Athlone Institute of Technology. Patricia Takako Endo is a Postdoctoral Research Fellow at the Irish Institute of Digital Business, Dublin City University, Ireland, and a Professor at Universidade de Pernambuco, Brazil.

Use policies and Cisco® ACI to make data centers more flexible and configurable--and deliver far more business value Using the policy driven data center approach, networking professionals can accelerate and simplify changes to the data center, construction of cloud infrastructure, and delivery of new applications. As you improve data center flexibility, agility, and portability, you can deliver far more business value, far more rapidly. In this guide, Cisco data center experts Lucien Avramov and Maurizio Portolani show how to achieve all these benefits with Cisco Application Centric Infrastructure (ACI) and technologies such as python, REST, and OpenStack. The authors explain the advantages, architecture, theory, concepts, and methodology of the policy driven data center. Next, they demonstrate the use of python scripts and REST to automate network management and simplify customization in ACI environments. Drawing on experience deploying ACI in enterprise data centers, the authors review design considerations and implementation methodologies. You will find design considerations for virtualized datacenters, high performance computing, ultra-low latency environments, and large-scale data centers. The authors walk through building multi-hypervisor and bare-metal infrastructures, demonstrate service integration, and introduce advanced telemetry capabilities for troubleshooting. Leverage the architectural and management innovations built into Cisco® Application Centric Infrastructure (ACI) Understand the policy driven data center model Use policies to meet the network performance and design requirements of modern data center and cloud environments Quickly map hardware and software capabilities to application deployments using graphical tools--or programmatically, via the Cisco APIC API Increase application velocity: reduce the time needed to move applications into production Define workload connectivity instead of (or along with) subnets, VLAN stitching, and ACLs Use Python scripts and REST to automate policy changes, parsing, customization, and self-service Design policy-driven data centers that support hypervisors Integrate OpenStack via the Cisco ACI APIC OpenStack driver architecture Master all facets of building and operating multipurpose cloud architectures with ACI Configure ACI fabric topology as an infrastructure or tenant administrator Insert Layer 4-Layer 7 functions using service graphs Leverage centralized telemetry to optimize performance; find and resolve problems Understand and familiarize yourself with the paradigms of programmable policy driven networks

For the past couple of years, network automation techniques that include software-defined networking (SDN) and dynamic resource allocation schemes have been the subject of a significant research and development effort. Likewise, network functions

virtualization (NFV) and the foreseeable usage of a set of artificial intelligence techniques to facilitate the processing of customers' requirements and the subsequent design, delivery, and operation of the corresponding services are very likely to dramatically distort the conception and the management of networking infrastructures. Some of these techniques are being specified within standards developing organizations while others remain perceived as a "buzz" without any concrete deployment plans disclosed by service providers. An in-depth understanding and analysis of these approaches should be conducted to help internet players in making appropriate design choices that would meet their requirements as well as their customers. This is an important area of research as these new developments and approaches will inevitably reshape the internet and the future of technology. Design Innovation and Network Architecture for the Future Internet sheds light on the foreseeable yet dramatic evolution of internet design principles and offers a comprehensive overview on the recent advances in networking techniques that are likely to shape the future internet. The chapters provide a rigorous in-depth analysis of the promises, pitfalls, and other challenges raised by these initiatives, while avoiding any speculation on their expected outcomes and technical benefits. This book covers essential topics such as content delivery networks, network functions virtualization, security, cloud computing, automation, and more. This book will be useful for network engineers, software designers, computer networking professionals, practitioners, researchers, academicians, and students looking for a comprehensive research book on the latest advancements in internet design principles and networking techniques. Foundations of Modern Networking is a comprehensive, unified survey of modern networking technology and applications for today's professionals, managers, and students. Dr. William Stallings offers clear and well-organized coverage of five key technologies that are transforming networks: Software-Defined Networks (SDN), Network Functions Virtualization (NFV), Quality of Experience (QoE), the Internet of Things (IoT), and cloudbased services. Dr. Stallings reviews current network ecosystems and the challenges they face—from Big Data and mobility to security and complexity. Next, he offers complete, self-contained coverage of each new set of technologies: how they work, how they are architected, and how they can be applied to solve real problems. Dr. Stallings presents a chapter-length analysis of emerging security issues in modern networks. He concludes with an up-to date discussion of networking careers, including important recent changes in roles and skill requirements. Coverage: Elements of the modern networking ecosystem: technologies, architecture, services, and applications Evolving requirements of current network environments SDN: concepts, rationale, applications, and standards across data, control, and application planes OpenFlow, OpenDaylight, and other key SDN technologies Network functions virtualization: concepts, technology, applications, and software defined infrastructure Ensuring customer Quality of Experience (QoE) with interactive video and multimedia network traffic Cloud networking: services, deployment models, architecture, and linkages to SDN and NFV IoT and fog computing in depth: key components of IoT-enabled devices, model architectures, and example implementations Securing SDN, NFV, cloud, and IoT environments Career preparation and ongoing education for tomorrow's networking careers Key Features: Strong coverage of unifying principles and practical techniques More than a hundred figures

that clarify key concepts Web support at williamstallings.com/Network/ QR codes throughout, linking to the website and other resources Keyword/acronym lists, recommended readings, and glossary Margin note definitions of key words throughout the text

The complete guide to Cisco® Intercloud: use cases, planning, and deployment Using Cisco Intercloud technologies, you can seamlessly integrate private, hybrid, and public clouds—securely providing the right resources at will, with consistent control. Now, four leading experts thoroughly introduce these powerful new technologies. Writing for CTOs, IT/network managers, security architects, product managers, application owners, service architects, and consultants, they explain both underlying Intercloud concepts and practical use cases. Sharing deep architectural insight, the authors focus on key technical enablers, from virtualization to autonomic management and advanced protocols. They also address the business challenges service providers will face in federated Intercloud relationships. Illuminating the Intercloud with cutting-edge customer examples, they also describe a phased pathway towards coherent deployment. You'll discover how the Intercloud can improve agility, portability, cost, and speed—and how to start transforming its potential into reality. Explore the Intercloud from both a technical and business standpoint Understand the role of Intercloud federations, exchanges, and brokers Review models for architecture and deployment Plan for effective service and customer management Manage workload portability without compromising service levels Handle service provisioning, assurance, and billing Implement best practices for federated security, privacy, and compliance Understand cloud APIs from “network up” and “application down” views Preview emerging standards for interoperability across disparate clouds Overcome challenges at IaaS, PaaS, SaaS, and other service layers Define user-to-network service contracts (UNCs) that permit dynamic cloud service mashups Understand microservices architectures and overlays for porting Intercloud applications Use the Intercloud to cooperatively engage resources from multiple cloud domains, and solve real business problems 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. 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.

The Cisco expert guide to planning, deploying, and operating virtual routing with the CSR 1000V Cloud Services Router Virtual routing and the Cisco Cloud

Services Router (CSR 1000V) are key enablers of today's revolutionary shift to elastic cloud applications and low-cost virtualized networking. Now, there's an authoritative, complete guide to building real solutions with the Cisco CSR 1000V platform. Three leading experts cover every essential building block, present key use cases and configuration examples, illuminate design and deployment scenarios, and show how the CSR 1000V platform and APIs can enable state-of-the-art software-defined networks (SDN). Drawing on extensive early adopter experience, they illuminate crucial OS and hypervisor details, help you overcome migration challenges, and offer practical guidance for monitoring and operations. This guide is an essential resource for all technical professionals planning or deploying data center and enterprise cloud services, and for all cloud network operators utilizing the Cisco CSR 1000V or future Cisco virtual routing platforms.

- Review the fundamentals of cloud virtualization, multitenant data-center design, and software-defined networking
- Understand the Cisco CSR 1000V's role, features, and infrastructure requirements
- Compare server hypervisor technologies for managing VM hardware with CSR 1000V deployments
- Understand CSR 1000V software architecture, control and data-plane design, licensing requirements, and packet flow
- Walk through common virtual router scenarios and configurations, including multiple cloud and data center examples
- Integrate CSR 1000V into the OpenStack SDN framework, and use its APIs to solve specific problems
- Master a best-practice workflow for deploying the CSR 1000V
- Use the Cisco management tools to automate, orchestrate, and troubleshoot virtualized routing

Category: Networking/Cloud Computing
Covers: Cloud Services Router
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

The purpose of this book is first to study cloud computing concepts, security concern in clouds and data centers, live migration and its importance for cloud computing, the role of firewalls in domains with particular focus on virtual machine (VM) migration and its security concerns. The book then tackles design, implementation of the frameworks and prepares test-beds for testing and evaluating VM migration procedures as well as firewall rule migration. The book demonstrates how cloud computing can produce an effective way of network management, especially from a security perspective.

InfoWorld is targeted to Senior IT professionals. Content is segmented into Channels and Topic Centers. InfoWorld also celebrates people, companies, and projects.

Network Function Virtualization provides an architectural, vendor-neutral level overview of the issues surrounding the large levels of data storage and transmission requirements needed for today's companies, also enumerating the benefits of NFV for the enterprise. Drawing upon years of practical experience, and using numerous examples and an easy-to-understand framework, authors

Tom Nadeau and Ken Gary discuss the relevancy of NFV and how it can be effectively used to create and deploy new services. Readers will learn how to determine if network function virtualization is right for their enterprise network, be able to use hands-on, step-by-step guides to design, deploy, and manage NFV in an enterprise, and learn how to evaluate all relevant NFV standards, including ETSI, IETF, Openstack, and Open Daylight. Provides a comprehensive overview of Network Function Virtualization (NFV) Discusses how to determine if network function virtualization is right for an enterprise network Presents an ideal reference for those interested in NFV Network Service Chaining, NSC network address translation (NAT), firewalling, intrusion detection, domain name service (DNS), caching, and software defined networks Includes hands-on, step-by-step guides for designing, deploying, and managing NFV in the enterprise Explains, and contrasts, all relevant NFV standards, including ETSI, IETF, Openstack, and Open Daylight

Here's the book you need to prepare for Cisco's CCNA exam, 640-801. This Study Guide was developed to meet the exacting requirements of today's Cisco certification candidates. In addition to the engaging and accessible instructional approach that has earned author Todd Lammle the "Best Study Guide Author" award in CertCities Readers' Choice Awards for two consecutive years, this updated fifth edition provides: In-depth coverage of every CCNA exam objective Expanded IP addressing and subnetting coverage More detailed information on EIGRP and OSPF Leading-edge exam preparation software Authoritative coverage of all exam objectives, including: Network planning & designing Implementation & operation LAN and WAN troubleshooting Communications technology

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