

Bookmark File PDF Building Data Centers With Vxlan Bgp Evpn A Cisco Nx Os Perspective Networking Technology

Getting the books **Building Data Centers With Vxlan Bgp Evpn A Cisco Nx Os Perspective Networking Technology** now is not type of challenging means. You could not forlorn going subsequent to ebook addition or library or borrowing from your connections to door them. This is an categorically easy means to specifically acquire guide by on-line. This online revelation Building Data Centers With Vxlan Bgp Evpn A Cisco Nx Os Perspective Networking Technology can be one of the options to accompany you in imitation of having supplementary time.

It will not waste your time. consent me, the e-book will categorically look you other thing to read. Just invest tiny get older to get into this on-line revelation **Building Data Centers With Vxlan Bgp Evpn A Cisco Nx Os Perspective Networking Technology** as with ease as evaluation them wherever you are now.

DXK6BE - DIAZ RIGOBERTO

The Art of Network Architecture Business-Driven Design The business-centered, business-driven guide to architecting and evolving networks The Art of Network Architecture is the first book that places business needs and capabilities at the center of the process of architecting and evolving networks. Two leading enterprise network architects help you craft solutions that are fully aligned with business strategy, smoothly accommodate change, and maximize future flexibility. Russ White and Denise Donohue guide network designers in asking and answering the crucial questions that lead to elegant, high-value solutions. Carefully blending business and technical concerns, they show how to optimize all network interactions involving flow, time, and people. The authors review important links between business requirements and network design, helping you capture the information you need to design effectively. They introduce today's most useful models and frameworks, fully addressing modularity, resilience, security, and management. Next, they drill down into network structure and topology, covering virtualization, overlays, modern routing choices, and highly complex network environments. In the final section, the authors integrate all these ideas to consider four realistic design challenges: user mobility, cloud services, Software Defined Networking (SDN), and today's radically new data center environments. • Understand how your choices of technologies and design paradigms will impact your business • Customize designs to improve workflows, support BYOD, and ensure business continuity • Use modularity, simplicity, and network management to prepare for rapid change • Build resilience by addressing human factors and redundancy • Design for security, hardening networks without making them brittle • Minimize network management pain, and maximize gain • Compare topologies and their tradeoffs • Consider the implications of network virtualization, and walk through an MPLS-based L3VPN example • Choose routing protocols in the context of business and IT requirements • Maximize mobility via ILNP, LISP, Mobile IP, host routing, MANET, and/or DDNS • Learn about the challenges of removing and changing services hosted in cloud environments • Understand the opportunities and risks presented by SDNs • Effectively design data center control planes and topologies

The definitive deep-dive guide to hardware and software troubleshooting on Cisco Nexus switches The Cisco Nexus platform and NX-OS switch operating system combine to deliver unprecedented speed, capacity, resilience, and flexibility in today's data center networks. Troubleshooting Cisco Nexus Switches and NX-OS is your single reference for quickly identifying and solving problems with these business-critical technologies. Three expert authors draw on deep experience with large Cisco customers, emphasizing the most common issues in real-world deployments, including problems that have caused major data center outages. Their authoritative, hands-on guidance addresses both features and architecture, helping you troubleshoot both control plane forwarding and data plane/data path problems and use NX-OS APIs to automate and simplify troubleshooting. Throughout, you'll find real-world configurations, intuitive illustrations, and practical insights into key platform-specific behaviors. This is an indispensable technical resource for all Cisco network consultants, system/support engineers, network operations professionals, and CCNP/CCIE certification candidates working in the data center domain. · Understand the NX-OS operating system and its powerful troubleshooting tools · Solve problems with cards, hardware drops, fabrics, and CoPP policies · Troubleshoot network packet switching and forwarding · Properly design, implement, and troubleshoot issues related to Virtual Port Channels (VPC and VPC+) · Optimize routing through filtering or path manipulation · Optimize IP/IPv6 services and FHRP protocols (including HSRP, VRRP, and Anycast HSRP) · Troubleshoot EIGRP, OSPF, and IS-IS neighbor relationships and routing paths · Identify and resolve issues with Nexus route maps · Locate problems with BGP neighbor adjacencies and enhance path selection · Troubleshoot high availability components (BFD, SSO, ISSU, and GIR) · Understand multicast protocols and troubleshooting techniques · Identify and solve problems with OTV · Use NX-OS APIs to automate troubleshooting and administrative tasks

Current data centre networks, based on electronic packet switches, are experiencing an exponential increase in network traffic due to developments such as cloud computing. Optical interconnects have emerged as a promising alternative offering high throughput and reduced power consumption. Optical Interconnects for Data Centers reviews key developments in the use of optical interconnects in data centres and the current state of the art in transforming this technology into a reality. The book discusses developments in optical materials and components (such as single and multi-mode waveguides), circuit boards and ways the technology can be deployed in data centres. Optical Interconnects for Data Centers is a key reference text for electronics designers, optical engineers, communications engineers and R&D managers working in the communications and electronics industries as well as postgraduate researchers. Summarizes the state-of-the-art in this emerging field Presents a comprehensive review of all the key aspects of deploying optical interconnects in data centers, from materials and components, to circuit boards and methods for integration Contains contributions that are drawn from leading international experts on the topic Securing, observing, and troubleshooting containerized workloads on Kubernetes can be daunting. It requires a range of considerations, from infrastructure choices and cluster configuration to deployment controls and runtime and network security. With this practical book, you'll learn how to adopt a holistic security and observability strategy for building and securing cloud native applications running on Kubernetes. Whether you're already working on cloud native applications or are in the process of migrating to its architecture, this guide introduces key security and observability concepts and best practices to help you unleash the power of cloud native applications. Authors Brendan Creane and Amit Gupta from Tigera take you through the full breadth of new cloud native approaches for establishing security and observability for applications running on Kubernetes. Learn why you need a security and observability strategy for cloud native applications and determine your scope of coverage Understand key concepts behind the book's security and observability approach Explore the technology choices available to support this strategy Discover how to share security responsibilities across multiple teams or roles Learn how to architect Kubernetes security and observability for multicloud and hybrid environments

The definitive guide to troubleshooting today's complex BGP networks This is today's best single source for the techniques you need to troubleshoot BGP issues in modern Cisco IOS, IOS XR, and NxOS environments. BGP has expanded from being an Internet routing protocol and provides a scalable control plane for a variety of technologies, including MPLS VPNs and VXLAN. Bringing together content previously spread across multiple sources, Troubleshooting BGP describes BGP functions in today's blended service provider and enterprise environments. Two expert authors emphasize the BGP-related issues you're most likely to encounter in real-world deployments, including problems that have caused massive network outages. They fully address convergence and scalability, as well as common concerns such as BGP slow peer, RT constraint filtering, and missing BGP routes. For each issue, key concepts are presented, along with basic configuration, detailed troubleshooting methods, and clear illustrations. Wherever appropriate, OS-specific behaviors are described and analyzed. Troubleshooting BGP is an indispensable technical resource for all consultants, system/support engineers, and operations professionals working with BGP in even the largest, most complex environments. · Quickly review the BGP protocol, configuration, and commonly used features · Master generic troubleshooting methodologies that are relevant to BGP networks · Troubleshoot BGP peering issues, flapping peers, and dynamic BGP peering · Resolve issues related to BGP route installation, path selection, or route policies · Avoid and fix convergence problems · Address platform issues such as high CPU or memory usage · Scale BGP using route reflectors, diverse paths, and other advanced features · Solve problems with BGP edge architectures, multihoming, and load balancing · Secure BGP inter-domain routing with RPKI · Mitigate DDoS attacks with RTBH and BGP Flowspec · Understand common BGP problems with MPLS Layer 3 or Layer 2 VPN services · Troubleshoot IPv6 BGP for service providers, including 6PE and 6VPE ·

Overcome problems with VXLAN BGP EVPN data center deployments · Fully leverage BGP High Availability features, including GR, NSR, and BFD · Use new BGP enhancements for link-state distribution or tunnel setup 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. Using the policy driven data center approach, networking professionals can make their data center topologies faster to configure and more portable. They can also build cloud infrastructure faster than before. All of this can be achieved by using REST and python together with the latest Cisco technology called Application Centric Infrastructure (ACI). The Policy Driven Data Center with ACI helps Architects, IT administrators, Network Administrators and Engineers to build and troubleshoot multipurpose cloud architectures. Cisco data center experts Lucien Avramov and Maurizio Portolani thoroughly explain the architecture, concepts, and methodology of the policy driven data center. The authors cover the key technology concepts, the tools for modern data centers including python scripting and REST, the design consideration and methodology of modern fabrics including VXLAN-based forwarding, the policy model theory and concepts, how to build a multi-hypervisor and bare-metal infrastructure including OpenStack, the service integration, and advanced telemetry capabilities for troubleshooting. The book concludes by discussing universal data center switch architecture concepts in order to clearly understand switching concepts and the newer trends in the Nexus 9000 product portfolio. Drawing on their extensive experience in enterprise engagements, the authors present effective solutions for virtualized data centers, high performance computing, ultra-low latency environments, and large-scale data centers. In addition to discussing relevant concepts and methodologies, the authors address design considerations associated with hardware, topologies, automation, and scalability. Technical professionals will find invaluable guidance on migrating current data center environments to a policy driven data center.

A Visual Guide to Understanding Software Defined Networks and Network Function Virtualization The simple, visual, at-a-glance guide to SDN and NFV: Core concepts, business drivers, key technologies, and more! SDN (Software Defined Networks) and NFV (Network Function Virtualization) are today's hottest areas of networking. Many executives, investors, sales professionals, and marketers need a solid working understanding of these technologies, but most books on the subject are written specifically for network engineers and other technical experts. SDN and NFV Simplified fills that gap, offering highly visual, "at-a-glance" explanations of SDN, NFV, and their underlying virtualizations. Built around an illustrated, story-telling approach, this answers the questions: Why does this technology matter? How does it work? Where is it used? What problems does it solve? Through easy, whiteboard-style infographics, you'll learn: how virtualization enables SDN and NFV; how datacenters are virtualized through clouds; how networks can also be virtualized; and how to maximize security, visibility, and Quality of Experience in tomorrow's fully-virtualized environments. Step by step, you'll discover why SDN and NFV technologies are completely redefining both enterprise and carrier networks, and driving the most dramatic technology migration since IP networking. That's not all: You'll learn all you need to help lead this transformation. Learn how virtualization establishes the foundation for SDN and NFV Review the benefits of VMs, the role of hypervisors, and the management of virtual resources Discover how cloud technologies enable datacenter virtualization Understand the roles of networking gear in virtualized datacenters See VMWare VMotion and VXLAN at work in the virtualized datacenter Understand multitенancy and the challenges of "communal living" Learn how core network functions and appliances can be virtualized Ensure performance and scalability in virtualized networks Compare modern approaches to network virtualization, including OpenFlow, VMWare Nicera, Cisco Insieme, and OpenStack Walk through the business case for SDN, NFV, and the Cloud Discover how the Software Defined Network (SDN) solves problems previously left unaddressed Understand SDN controllers—and who's fighting to control your network Use SDN and NFV to improve integration and say goodbye to "truck rolls" En-

force security, avoid data leakage, and protect assets through encryption Provide for effective monitoring and consistent Quality of Experience (QoE) Learn how SDN and NFV will affect you—and what's next

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.

CompTIA-Authorized courseware for the Cloud Essentials Exam (CLO-001) What better way to get up to speed on cloud computing than with this new book in the popular Sybex Essentials series? Cloud Essentials covers the basics of cloud computing and its place in the modern enterprise. Explore public and private clouds; contrast the "as a service" models for PaaS, SaaS, IaaS, or XaaS platforms; plan security; and more. In addition, the book covers the exam objectives for the both the CompTIA Cloud Essentials (Exam CLO-001) exam and the EXIN Cloud Computing Foundation (EX0-116) certification exams and includes suggested exercises and review questions to reinforce your learning. Gets you up to speed on the hottest trend in IT--cloud computing Prepares IT professionals and those new to the cloud for and cover all of the CompTIA Cloud Essentials and EXIN Cloud Computing Foundation exam objectives Serves as CompTIA Authorized courseware for the exam Examines various models for cloud computing implementation, including public and private clouds Contrasts "as a service" models for platform (PaaS), software (SaaS), infrastructure (IaaS), and other technologies (XaaS) Identifies strategies for implementation on tight budgets and goes into planning security and service management Get a through grounding in cloud basics and prepare for your cloud certification exam with Cloud Essentials.

Cloud Data Center Network Architectures and Technologies has been written with the support of Huawei's vast technical knowledge and experience in the data center network (DCN) field, as well as its understanding of customer service requirements. This book describes in detail the architecture design, technical implementation, planning and design, and deployment suggestions for cloud DCNs based on the service challenges DCNs encounter. It starts by describing the overall architecture and technical evolution of DCNs, with the aim of helping readers understand the development of DCNs. It then proceeds to explain the design and implementation of cloud DCNs, including the service model of a single data center (DC), construction of physical and logical networks of DCs,

construction of multiple DCNs, and security solutions of DCs. Next, this book dives deep into practices of cloud DCN deployment based on real-world cases to help readers better understand how to build cloud DCNs. Finally, this book introduces DCN openness and some of the hottest forward-looking technologies. In summary, you can use this book as a reference to help you to build secure, reliable, efficient, and open cloud DCNs. It is intended for technical professionals of enterprises, research institutes, information departments, and DCs, as well as teachers and students of computer network-related majors in colleges and universities. Authors Lei Zhang Mr. Zhang is the Chief Architect of Huawei's DCN solution. He has more than 20 years' experience in network product and solution design, as well as a wealth of expertise in product design and development, network planning and design, and network engineering project implementation. He has led the design and deployment of more than 10 large-scale DCNs for Fortune Global 500 companies worldwide. Le Chen Mr. Chen is a Huawei DCN Solution Documentation Engineer with eight years' experience in developing documents related to DCN products and solutions. He has participated in the design and delivery of multiple large-scale enterprise DCNs. Mr. Chen has written many popular technical document series, such as DCN Handbook and BGP Topic.

Implement flexible, efficient LISP-based overlays for cloud, data center, and enterprise The LISP overlay network helps organizations provide seamless connectivity to devices and workloads wherever they move, enabling open and highly scalable networks with unprecedented flexibility and agility. LISP Network Deployment and Troubleshooting is the definitive resource for all network engineers who want to understand, configure, and troubleshoot LISP on Cisco IOS-XE, IOS-XR and NX-OS platforms. It brings together comprehensive coverage of how LISP works, how it integrates with leading Cisco platforms, how to configure it for maximum efficiency, and how to address key issues such as scalability and convergence. Focusing on design and deployment in real production environments, three leading Cisco LISP engineers present authoritative coverage of deploying LISP, verifying its operation, and optimizing its performance in widely diverse environments. Drawing on their unsurpassed experience supporting LISP deployments, they share detailed configuration examples, templates, and best practices designed to help you succeed with LISP no matter how you intend to use it. This book is the Cisco authoritative guide to LISP protocol and is intended for network architects, engineers, and consultants responsible for implementing and troubleshooting LISP network infrastructures. It includes extensive configuration examples with troubleshooting tips for network engineers who want to improve optimization, performance, reliability, and scalability. This book covers all applications of LISP across various environments including DC, Enterprise, and SP. Review the problems LISP solves, its current use cases, and powerful emerging applications Gain in-depth knowledge of LISP's core architecture and components, including xTRs, PxTRs, MR/MS, ALT, and control plane message exchange Understand LISP software architecture on Cisco platforms Master LISP IPv4 unicast routing, LISP IPv6 routing, and the fundamentals of LISP multicast routing Implement LISP mobility in traditional data center fabrics, and LISP IP mobility in modern data center fabrics Plan for and deliver LISP network virtualization and support multitenancy Explore LISP in the Enterprise multihome Internet/WAN edge solutions Systematically secure LISP environments Troubleshoot LISP performance, reliability, and scalability

The intent of this book is to explain various design models for Overlay Network and Underlay Network used in VXLAN Fabric with BGP EVPN Control-Plane. The first two chapters are focusing on the Underlay Network solution. The OSPF is introduced first. Among other things, the book explains how OSPF flooding can be minimized with area design. After OSPF there is a chapter about BGP in the Underlay network. Both OSPF and BGP are covered deeply and things like convergence are discussed. After the Underlay Network part, the book focuses on BGP design. It explains the following models: (a) BGP Multi-AS with OSPF Underlay, this chapter discusses two design models - Shared Spine ASN and Unique Spine ASN, (b) BGP-Only Multi-ASN where both direct and loopback overlay BGP peering models are explained, (c) Single-ASN with OSPF Underlay, (d) Hybrid-ASN with OSPF Underlay - Pod-specific shared ASN connected via Super-Spine layer using eBGP peering, (e) Dual-ASN model where leafs share the same ASN and spines share their ASN. Each of the design model chapters includes a "Complexity Map" that should help readers to understand the complexity of each solution. This book also explains BGP ECMP and related to ECMP, the book also covers ESI Multihoming. The last chapter introduces how two Pods, can also be geographically dispersed DCs, can be connected using Layer 3 only DCI with MPLS. I am using 5-stage Clos topology throughout the book. Some solutions are though explained by using only three switches for the sake of simplicity. I am also using IP-Only Underlay Network with Ingress-Replication, so this book does not cover Underlay Network Multicast solution. Besides, I am not covering DCI using Layer 2 Border Gateway

(BGW) or Overlay Tenant Routing Multicast solution in this book because those, among the Underlay Multicast solutions, are covered in my first book "Virtual Extensible LAN - VXLAN: A Practical Guide to VXLAN solution" that is available at Amazon and Leanpub. I wanted to keep the focus of the book fairly narrow and concentrate on the Control-Plane design and functionality. Please be aware that this book does not give any recommendation to which solution is the best and which is not. It is the readers' responsibility to find that out and selects the best solution for their needs. The book includes 66 images, 260 configuration/show command examples, and 32 packet captures.

The superabundance of data that is created by today's businesses is making storage a strategic investment priority for companies of all sizes. As storage takes precedence, the following major initiatives emerge: Flatten and converge your network: IBM® takes an open, standards-based approach to implement the latest advances in the flat, converged data center network designs of today. IBM Storage solutions enable clients to deploy a high-speed, low-latency Unified Fabric Architecture. Optimize and automate virtualization: Advanced virtualization awareness reduces the cost and complexity of deploying physical and virtual data center infrastructure. Simplify management: IBM data center networks are easy to deploy, maintain, scale, and virtualize, delivering the foundation of consolidated operations for dynamic infrastructure management. Storage is no longer an afterthought. Too much is at stake. Companies are searching for more ways to efficiently manage expanding volumes of data, and to make that data accessible throughout the enterprise. This demand is propelling the move of storage into the network. Also, the increasing complexity of managing large numbers of storage devices and vast amounts of data is driving greater business value into software and services. With current estimates of the amount of data to be managed and made available increasing at 60% each year, this outlook is where a storage area network (SAN) enters the arena. SANs are the leading storage infrastructure for the global economy of today. SANs offer simplified storage management, scalability, flexibility, and availability; and improved data access, movement, and backup. Welcome to the cognitive era. The smarter data center with the improved economics of IT can be achieved by connecting servers and storage with a high-speed and intelligent network fabric. A smarter data center that hosts IBM Storage solutions can provide an environment that is smarter, faster, greener, open, and easy to manage. This IBM® Redbooks® publication provides an introduction to SAN and Ethernet networking, and how these networks help to achieve a smarter data center. This book is intended for people who are not very familiar with IT, or who are just starting out in the IT world.

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

This primer on NSX-T helps you understand the capabilities and features of NSX-T, how to configure and manage NSX-T, and integrate NSX-T with other software. The book is the first in a series that will teach you the basics of NSX-T, which is an update of VMware's original software-defined networking (SDN) architecture aimed at making networks agile and flexible. You will

become familiar with VMware's software-defined data center (SDDC) ecosystem and how NSX-T fits in. You will understand NSX-T components such as NSX-T Manager, NSX-T Edge Transport Nodes, and NSX-T Host Transport Nodes. And you will learn how to install and configure network services such as East/West and North/South routing capabilities, layer two switching, VRF, EVPN, multicast, and layer two bridging. The book provides best practices on how to configure routing and switching features, and teaches you how to get the required visibility of not only your NSX-T platform but also your NSX-T-enabled network infrastructure. The book explains security, advanced network features, and multi-site capabilities and demonstrates how network and security services can be offered across multiple on-premise locations with a single pane of glass for networking and security policy management. The interface with public cloud services is discussed and the book explains NSX-T operation in an on-premise private cloud and positioning and integrating NSX-T on a public cloud (off premises). What You Will Learn Understand how NSX-T fits in the VMware SDDC ecosystem Know what NSX-T is, its components, and the terminology used Install NSX-T Configure NSX-T network services Manage the NSX-T network Who This Book Is For Virtualization administrators, system integrators, and network administrators

This volume presents a collection of peer-reviewed, scientific articles from the 15th International Conference on Information Technology – New Generations, held at Las Vegas. The collection addresses critical areas of Machine Learning, Networking and Wireless Communications, Cybersecurity, Data Mining, Software Engineering, High Performance Computing Architectures, Computer Vision, Health, Bioinformatics, and Education.

Using TRILL, FabricPath, and VXLAN Designing Massively Scalable Data Centers with Overlays TRILL, FabricPath, and VXLAN overlays help you distribute data traffic far more effectively, dramatically improving utilization in even the largest data center networks. Using TRILL, FabricPath, and VXLAN is the first practical and comprehensive guide to planning and establishing these high-efficiency overlay networks. The authors begin by reviewing today's fast-growing data center requirements, and making a strong case for overlays in the Massive Scale Data Center (MSDC). Next, they introduce each leading technology option, including FabricPath, TRILL, LISP, VXLAN, NVGRE, OTV, and Shortest Path Bridging (SPB). They also present a chapter-length introduction to IS-IS, focusing on details relevant to the control of FabricPath and TRILL networks. Building on this foundation, they offer in-depth coverage of FabricPath: its advantages, architecture, forwarding, configuration, verification, and benefits in Layer-2 networks. Through examples, they explain TRILL's architecture, functionality, and forwarding behavior, focusing especially on data flow. They also fully address VXLAN as a solution for realizing IP-based data center fabrics, including multi-tenant cloud applications. Using TRILL, FabricPath, and VXLAN provides detailed strategies and methodologies for FabricPath, TRILL, and VXLAN deployment and migration, as well as best practices for management and troubleshooting. It also presents three detailed implementation scenarios, each reflecting realistic data center challenges. In particular, the authors show how to integrate multiple overlay technologies into a single end-to-end solution that offers exceptional flexibility, agility, and availability. Sanjay K. Hooda is principal engineer in Catalyst switching software engineering at Cisco. He has more than 15 years of network design and implementation experience in large enterprise environments, and has participated in IETF standards activities. His interests include wireless, multicast, TRILL, FabricPath, High Availability, ISSU, and IPv6. He is co-author of IPv6 for Enterprise Networks. Shyam Kapadia, Technical Leader at Cisco's Data Center Group (DCG), was an integral part of the team that delivered the next-generation Catalyst 6500 Sup 2T (2 Terabyte) platform. Since then, he has focused on developing new solutions for data center environments. He holds a Ph.D. in computer science from USC, where his research encompassed wired, wireless, ad hoc, vehicular, and sensor networks. Padmanabhan Krishnan has more than 12 years of experience in networking and telecommunications, including 7 at Cisco. His recent experience has included providing data path solutions for TRILL in the Catalyst 6500 Sup 2T Platform using FPGA, as well as design and development of platform core infrastructure and L2 features. n Discover how overlays can address data center network problems ranging from scalability to rapid provisioning n Examine popular data center overlay examples n Learn about extensions to IS-IS for TRILL and FabricPath n Use FabricPath, TRILL, and VXLAN to simplify configuration, improve performance and availability, optimize efficiency, and limit table size n Learn about FabricPath control and data plane architecture details n Review example FabricPath configurations on Cisco Nexus 7000/6000/5000 switches n Understand TRILL concepts and architecture, including overlay header, control and data plane, and MAC address learning n Learn about VXLAN architecture details and packet forwarding n Review example VXLAN configurations on a Cisco Nexus 1000V distributed virtual switch n Implement TRILL/Fab-

ricPath networks with VXLAN to virtualized servers in an intra-data center environment n Connect multiple traditional data centers using an OTV overlay as a Layer 2 extension n Use OTV overlays to connect sites running FabricPath, TRILL, or both ACI Advanced Monitoring and Troubleshooting provides a solid conceptual foundation and in-depth technical knowledge for monitoring and troubleshooting virtually any problem encountered during testing, deployment, or operation of Cisco Application Centric Infrastructure (ACI) infrastructure. Authored by leading ACI support experts at Cisco, it covers all you'll need to keep your ACI deployment working optimally. Coverage includes: Core ACI concepts and components, including Nexus 9000 Series platforms, APIC controllers, and protocols In-depth insight into ACI's policy model ACI fabric design options: single and multiple data centers, stretched vs. multiple fabrics, and multi-pod/multi-site Automation, orchestration, and the cloud in ACI environments ACI topology and hardware/software specifications End host and network connectivity VMM integration Network management configuration, including SNMP, AAA, and SPAN Monitoring ACI fabrics and health Getting immediate results through the NX-OS command line interface Troubleshooting use cases: fabric discovery, APIC, management access, contracts, external connectivity, leaf/spine connectivity, end-host connectivity, VMM problems, ACI multi-pod/multi-site problems, and more Explore the foundational components of VMware NSX About This Book Install, manage, monitor and configure your NSX deployment. Understand VMware NSX's components and discover best practices to help you manage VMware NSX A step by step guide that will help you elevate your skills in deploying NSX to your environment Who This Book Is For The book is intended for network and system administrators that have hands on experience with VMware vSphere suite of products and would like to learn more about software defined networking and implementation of NSX. The readers are also expected to have basic networking knowledge and aware of basic switching and routing fundamentals. What You Will Learn Understand software-defined networks Deploy and configure VXLAN-enabled logical switches Secure your environment using Distributed Firewall and Data Security Configure third-party services in NSX Manage, configure, and deploy edge gateway services Perform various Edge operations including configuring CA certificates Explore the different monitoring options to check their traffic flow In Detail VMware NSX is a platform for the software-defined data center. It allows complex networking topologies to be deployed programmatically in seconds. SDNs allow ease of deployment, management, and automation in deploying and maintaining new networks while reducing and in some cases completely eliminating the need to deploy traditional networks. The book allows you a thorough understanding of implementing Software defined networks using VMware's NSX. You will come across the best practices for installing and configuring NSX to setup your environment. Then you will get a brief overview of the NSX Core Components NSX's basic architecture. Once you are familiar with everything, you will get to know how to deploy various NSX features. Furthermore, you will understand how to manage and monitor NSX and its associated services and features. In addition to this, you will also explore the best practices for NSX deployments. By the end of the book, you will be able to deploy VMware NSX in your own environment with ease. This book can come handy if you are preparing for VMware NSX certification. Style and approach This is an easy-to-follow guide with tested configuration steps to get you up and running quickly. This book covers the nitty-gritty of installing, configuring, managing, and monitoring VMware NSX.

Prepare for the future of cloud infrastructure: Distributed Services Platforms By moving service modules closer to applications, Distributed Services (DS) Platforms will future-proof cloud architectures—improving performance, responsiveness, observability, and troubleshooting. Network pioneer Silvano Gai demonstrates DS Platforms' remarkable capabilities and guides you through implementing them in diverse hardware. Focusing on business benefits throughout, Gai shows how to provide essential shared services such as segment routing, NAT, firewall, micro-segmentation, load balancing, SSL/TLS termination, VPNs, RDMA, and storage—including storage compression and encryption. He also compares three leading hardware-based approaches—Sea of Processors, FPGAs, and ASICs—preparing you to evaluate solutions, ask the right questions, and plan strategies for your environment. Understand the business drivers behind DS Platforms, and the value they offer See how modern network design and virtualization create a foundation for DS Platforms Achieve unprecedented scale through domain-specific hardware, standardized functionalities, and granular distribution Compare advantages and disadvantages of each leading hardware approach to DS Platforms Learn how P4 Domain-Specific Language and architecture enable high-performance, low-power ASICs that are data-plane-programmable at runtime Distribute cloud security services, including firewalls, encryption, key management, and VPNs Implement distributed storage and RDMA ser-

vices in large-scale cloud networks Utilize Distributed Services Cards to offload networking processing from host CPUs Explore the newest DS Platform management architectures Building a Future-Proof Cloud Architecture is for network, cloud, application, and storage engineers, security experts, and every technology professional who wants to succeed with tomorrow's most advanced service architectures.

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.

Over a half-million sold! The sequel, The Unicorn Project, is coming Nov 26 "Every person involved in a failed IT project should be forced to read this book."—TIM O'REILLY, Founder & CEO of O'Reilly Media "The Phoenix Project is a must read for business and IT executives who are struggling with the growing complexity of IT."—JIM WHITEHURST, President and CEO, Red Hat, Inc. Five years after this sleeper hit took on the world of IT and flipped it on its head, the 5th Anniversary Edition of The Phoenix Project continues to guide IT in the DevOps revolution. In this newly updated and expanded edition of the bestselling The Phoenix Project, co-author Gene Kim includes a new afterword and a deeper delve into the Three Ways as described in The DevOps Handbook. Bill, an IT manager at Parts Unlimited, has been tasked with taking on a project critical to the future of the business, code named Phoenix Project. But the project is massively over budget and behind schedule. The CEO demands Bill must fix the mess in ninety days or else Bill's entire department will be outsourced. With the help of a prospective board member and his mysterious philosophy of The Three Ways, Bill starts to see that IT work has more in common with a manufacturing plant work than he ever imagined. With the clock ticking, Bill must organize work flow streamline interdepartmental communications, and effectively serve the other business functions at Parts Unlimited. In a fast-paced and entertaining style, three luminaries of the DevOps movement deliver a story that anyone who works in IT will recognize. Readers will not only learn how to improve their own IT organizations, they'll never view IT the same way again. "This book is a gripping read that captures brilliantly the dilemmas that face companies which depend on IT, and offers real-world solutions."—JEZ HUMBLE, Co-author of Continuous Delivery, Lean Enterprise, Accelerate, and The DevOps Handbook ——— "I'm delighted at how The Phoenix Project has reshaped so many conversations in technology. My goal in writing The Unicorn Project was to explore and reveal the necessary but invisible structures required to make developers (and all engineers) productive, and reveal the devastating effects of technical debt and complexity. I hope this book can create common ground for

technology and business leaders to leave the past behind, and co-create a better future together.”—Gene Kim, November 2019

Master your virtual environment with the ultimate vSphere guide *Mastering VMware vSphere 6.7* is the fully updated edition of the bestselling guide to VMware's virtualization solution. With comprehensive coverage of this industry-leading toolset, this book acts as an informative guide and valuable reference. Step-by-step instruction walks you through installation, configuration, operation, security processes, and much more as you conquer the management and automation of your virtual environment. Written by certified VMware vExperts, this indispensable guide provides hands-on instruction and detailed conceptual explanations, anchored by practical applications and real-world examples. This book is the ultimate guide to vSphere, helping administrators master their virtual environment. Learn to: Install, configure, and manage the vCenter Server components Leverage the Support Tools to provide maintenance and updates Create and configure virtual networks, storage devices, and virtual machines Implement the latest features to ensure compatibility and flexibility Manage resource allocation and utilization to meet application needs Monitor infrastructure performance and availability Automate and orchestrate routine administrative tasks *Mastering VMware vSphere 6.7* is what you need to stay up-to-date on VMware's industry-leading software for the virtualized datacenter.

The growth in public and private clouds spend is vastly outpacing the growth in overall IT spend. The change is so fast that traditional networking and security vendors are unable to keep pace with it. IT is looking at ways to keep up with the elastic demand and expectations from applications and the users in the world of Clouds. This trend is not only seen in large organizations but also observed in small and medium businesses. VMware NSX is the game changer with its network and security virtualization to re-define data centers and the enabler to build and run private clouds. VMware NSX is also the integration point between private and public cloud with its offering such as VMC (VMware Cloud) on AWS. VMware NSX with its sophisticated, powerful and at the same time flexible architecture, gives the same feature and power to small and medium businesses as it has given it to large enterprises and service providers covering all verticals. This book will help not only SMB but also large organizations as well to adopt this technology because it is seen that often large enterprises started their data center transformation journey with a small footprint. After realizing the huge impact and benefits of NSX, these large enterprises grew from small to medium or even large footprint in a short period. Aim of this book is also to give readers, architects, engineers the necessary tool and techniques that they can use to transform their legacy data center architecture to software defined private cloud based architecture. It discussed a recipe of success, a well-orchestrated path to success, a step by step approach to implement network and security virtualization that is proven and adopted by many in the industry.

This IBM® Redbooks® publication shows how to integrate IBM Software Defined Network for Virtual Environments (IBM SDN VE) seamlessly within a new or existing data center. This book is aimed at pre- and post-sales support, targeting network administrators and other technical professionals that want to get an overview of this new and exciting technology, and see how it fits into the overall vision of a truly Software Defined Environment. It shows you all of the steps that are required to design, install, maintain, and troubleshoot the IBM SDN VE product. It also highlights specific, real-world examples that showcase the power and flexibility that IBM SDN VE has over traditional solutions with a legacy network infrastructure that is applied to virtual systems. This book assumes that you have a general familiarity with networking and virtualization. It does not assume an in-depth understanding of KVM or VMware. It is written for administrators who want to get a quick start with IBM SDN VE in their respective virtualized infrastructure, and to get some virtual machines up and running by using the rich features of the product in a short amount of time (days, not week, or months).

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 interconnecti-

ty, 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, multi-fabric, and Data Center Interconnect (DCI) options Integrate Layer 4-7 services into the fabric, including load balancers and firewalls Manage fabrics with POAP-based day-0 provisioning, incremental day 0.5 configuration, overlay day-1 configuration, or day-2 operations

Master the day-to-day administration and maintenance procedures for existing VXLAN fabrics. In this book you'll discuss common issues and troubleshooting steps to help you keep your environment in stable operation. The *Fast-Track Guide to VXLAN BGP EVPN Fabrics* is a guide for network engineers and architects who can't spend too much time learning everything about VXLAN. It has been created with the end goal of providing you with a straightforward approach to understand, implement, administer, and maintain VXLAN BGP EVPN-based data center networks. Using this book, you will understand Virtual Extensible LAN (VXLAN) as a technology that combines network virtualization and service provider class network attributes to solve the performance and scalability limitations in a three-tier design. You will learn to combine multiple links and provide equal-cost multipathing to effortlessly scale speed requirements without being worried about potential loops. You will learn VXLAN BGP EVPN configuration procedures with graphical step-by-step examples. You will be introduced to foundational concepts in VXLAN without the need to go over hundreds of documentation pages. This book is a clear and precise guide to implementing a spine and leaf architecture running with VXLAN. It explains how to perform day-to-day maintenance and administration tasks after implementing your first VXLAN fabric. It also explains how to integrate external devices such as firewalls, routers, and load balancers to VXLAN; how to leverage your VXLAN fabric; and how to create multiple tenant networks to secure your critical infrastructure. What You Will Learn Discover the advantages of a VXLAN spine and leaf fabric over a traditional three-tier network design Work with the BGP L2VPN EVPN control plane VXLAN Examine the purpose of underlay and overlay in VXLAN Use multitenancy and tenant anycast gateways Connect your VXLAN fabric to external networks Who This Book Is For Senior network engineers, solutions architects, and data center engineers.

This is the eBook of the printed book and may not include any media, website access codes, or print supplements that may come packaged with the bound book. CCNA Data Center DCICN 200-150 Official Cert Guide from Cisco Press allows you to succeed on the exam the first time and is the only self-study resource approved by Cisco. Cisco Data Center experts Chad Hintz, Cesar Obediente, and Ozden Karakok share 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 exam Do I Know This Already? quizzes, which allows 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 IT Certification Practice Test software complete with hundreds of well-reviewed, exam-realistic questions customization options, and detailed performance reports 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, study plans, assessment features, challenging review questions and exercises, this official study guide helps you master the concepts and techniques that ensure your exam success. The official study guide helps you master topics on the CCNA Data Center DCICN 200-150 exam, including the following: Nexus data center infrastructure and architecture Networking models, Ethernet LANs, and IPv4/IPv6 addressing/routing Data center Nexus switching and routing fundamentals Nexus switch installation and operation VLANs, trunking, STP, and Ethernet switching IPv4 and IPv6 subnetting IPv4 routing concepts, protocols, configuration, and access control Data center storage networking technologies and configurations

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 Learn practical guidelines for designing and deploying a scalable BGP routing architecture Up-to-date coverage of BGP features like performance tuning, multiprotocol BGP, MPLS VPN, and multicast BGP In-depth coverage of advanced BGP topics to help design a complex BGP routing architecture Practical design tips that have been proven in the field Extensive configuration examples and case studies BGP Design and Implementation focuses on real-world problems and provides not only design solutions, but also the background on why they are appropriate and a practical overview of how they apply into a top-down design. The BGP protocol is being used in both service provider and enterprise networks. The design goals of these two groups are different, leading to different architectures being used in each environment. The title breaks out the separate goals, and resulting solutions for each group to assist the reader in further understanding different solution strategies. This book starts by identifying key features and functionality in BGP. It then delves into the topics of performance tuning, routing policy development, and architectural scalability. It progresses by examining the challenges for both the service provider and enterprise customers, and provides practical guidelines and a design framework for each. BGP Design and Implementation finishes up by closely looking at the more recent extensions to BGP through Multi-Protocol BGP for MPLS-VPN, IP Multicast, IPv6, and CLNS. Each chapter is generally organized into the following sections: Introduction, Design and Implementation Guidelines, Case Studies, and Summary.

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 ca-

bling 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"

This is the eBook version of the print title. Note that the eBook does not provide access to the practice test software that accompanies the print book. Access to the personal video mentoring is available through product registration at Cisco Press; or see the instructions in the back pages of your eBook. Learn, prepare, and practice for CCNP/CCIE Data Center Core DCCOR 350-601 exam success with this Cert Guide from Cisco Press, a leader in IT certification learning and the only self-study resource approved by Cisco. · Master CCNP/CCIE Data Center Core DCCOR 350-601 exam topics · Assess your knowledge with chapter-ending quizzes · Review key concepts with exam preparation tasks · Learn from more than two hours of video mentoring CCNP and CCIE Data Center Core DCCOR 350-601 Official Cert Guide is a best-of-breed exam study guide. Expert authors Somit Maloo and Firas Ahmed share preparation hints and test-taking tips, helping you identify areas of weakness and improve both your conceptual knowledge and hands-on skills. Material is presented in a concise manner, focusing on increasing your understanding and retention of exam topics. The book presents you with an organized test-preparation routine through the use of proven series elements and techniques. Exam topic lists make referencing easy. Chapter-ending Exam Preparation Tasks help you drill on key concepts you must know thoroughly. Review questions help you assess your knowledge, and a final preparation chapter guides you through tools and resources to help you craft your final study plan. The book also contains more than two hours of personal video mentoring from the Pearson IT Certification Complete Video Course. Go to the back pages of your eBook for instructions on how to access the personal video mentoring content. Well regarded for its level of detail, assessment features, and challenging review questions and exercises, this study guide helps you master the concepts and techniques that will help you succeed on the exam the

first time. This official study guide helps you master all the topics on the CCNP/CCIE Data Center Core DCCOR 350-601 exam, including · Network · Compute · Storage Network · Automation · Security

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, service 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. Venkata (Josh) Josyula, Ph.D., CCIE(R) No. 13518 is a Distinguished Services Engineer in Cisco Services Technology Group (CSTG) and advises Cisco customers on OSS/BSS architecture and solutions. Malcolm Orr, Solutions Architect for Cisco's Services Technology Solutions, advises telecoms and enterprise clients on architecting, building, and operating OSS/BSS and cloud management stacks. He is Cisco's lead architect for several Tier 1 public cloud projects. Greg Page has spent the last eleven years with Cisco in technical consulting roles relating to data center architecture/technology and service provider security. He is now exclusively focused on developing cloud/IaaS solutions with service providers and systems integrator partners. - Review the key concepts needed to successfully deploy clouds and cloud-based services - Transition common enterprise design patterns and use cases to the cloud - Master architectural principles and infrastructure designs 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(R), which offers networking professionals valuable information for constructing efficient networks, understanding new technologies, and building successful careers. Category: Cloud Computing Covers: Virtualized Data Centers The authors present multiple command-line interface (CLI) commands, screen captures, realistic configurations, and troubleshooting tips--all based on their extensive experience working with customers who have successfully deployed Nexus switches in their data centers. --Book Jacket.

If you want to study, build, or simply validate your thinking about modern cloud native data center networks, this is your book. Whether you're pursuing a multitenant private cloud, a network for running machine learning, or an enterprise data center, author Dinesh Dutt takes you through the steps necessary to design a data center that's affordable, high capacity, easy to manage, agile, and reliable. Ideal for network architects, data center operators, and network and containerized application developers, this book mixes theory with practice to guide you through the architecture

and protocols you need to create and operate a robust, scalable network infrastructure. The book offers a vendor-neutral way to look at network design. For those interested in open networking, this book is chock-full of examples using open source software, from FRR to Ansible. In the context of a cloud native data center, you'll examine: Clos topology Network disaggregation Network operating system choices Routing protocol choices Container networking Network virtualization and EVPN Network automation

In 1994, W. Richard Stevens and Addison-Wesley published a networking classic: TCP/IP Illustrated. The model for that book was a brilliant, unfettered approach to networking concepts that has proven itself over time to be popular with readers of beginning to intermediate networking knowledge. The Illustrated Network takes this time-honored approach and modernizes it by creating not only a much larger and more complicated network, but also by incorporating all the networking advancements that have taken place since the mid-1990s, which are many. This book takes the popular Stevens approach and modernizes it, employing 2008 equipment, operating systems, and router vendors. It presents an ?illustrated? explanation of how TCP/IP works with consistent examples from a real, working network configuration that includes servers, routers, and workstations. Diagnostic traces allow the reader to follow the discussion with unprecedented clarity and precision. True to the title of the book, there are 330+ diagrams and screen shots, as well as topology diagrams and a unique repeating chapter opening diagram. Illustrations are also used as end-of-chapter questions. A complete and modern network was assembled to write this book, with all the material coming from real objects connected and running on the network, not assumptions. Presents a real world networking scenario the way the reader sees them in a device-agnostic world. Doesn't preach one platform or the other. Here are ten key differences between the two: Stevens Goralski's Older operating systems (AIX,svr4,etc.) Newer OSs (XP, Linux, FreeBSD, etc.) Two routers (Cisco, Telebit (obsolete)) Two routers (M-series, J-series) Slow Ethernet and SLIP link Fast Ethernet, Gigabit Ethernet, and SONET/SDH links (modern) Tcpdump for traces Newer, better utility to capture traces (Ethereal, now has a new name!) No IPsec IPsec No multicast Multicast No router security discussed Firewall routers detailed No Web Full Web browser HTML consideration No IPv6 IPv6 overview Few configuration details More configuration details (ie, SSH, SSL, MPLS, ATM/FR consideration, wireless LANS, OSPF and BGP routing protocols New Modern Approach to Popular Topic Adopts the popular Stevens approach and modernizes it, giving the reader insights into the most up-to-date network equipment, operating systems, and router vendors. Shows and Tells Presents an illustrated explanation of how TCP/IP works with consistent examples from a real, working network configuration that includes servers, routers, and workstations, allowing the reader to follow the discussion with unprecedented clarity and precision. Over 330 Illustrations True to the title, there are 330 diagrams, screen shots, topology diagrams, and a unique repeating chapter opening diagram to reinforce concepts Based on Actual Networks A complete and modern network was assembled to write this book, with all the material coming from real objects connected and running on the network, bringing the real world, not theory, into sharp focus.

Like the popular guides The MX Series and Juniper QFX5100 Series, this practical book—written by the same author—introduces new QFX10000 concepts in switching and virtualization, specifically in the core of the data center network. The rise of cloud computing with service providers and the need to create private clouds for enterprise, government agencies, and research institutions of all shapes and sizes is creating a high demand for high-density 40GbE and 100GbE in the core of the data center network. The Juniper QFX10000 Series was introduced by Juniper Networks to solve these challenges, and it is a game-changer. This new book by Douglas Hanks is the authoritative guide. Topics include: Device Architecture Flexible Deployment Scenarios Performance and Scaling Disaggregation of Software and Hardware Data Center API Next Generation QFabric Network-Based Overlay Fabric Network Analytics