

# Data Center Bridging Cisco

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*Data Center Bridging Cisco*

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## HICKS KAITLIN

*IBM Information Infrastructure Solutions Handbook* Packt Publishing Ltd

Cisco® Nexus switches and the new NX-OS operating system are rapidly becoming the new de facto standards for data center distribution/aggregation layer networking. NX-OS builds on Cisco IOS to provide advanced features that will be increasingly crucial to efficient data center operations. NX-OS and Cisco Nexus Switching is the definitive guide to utilizing these powerful new capabilities in enterprise environments. In this book, three Cisco consultants cover every facet of deploying, configuring, operating, and troubleshooting NX-OS in the data center. They review the key NX-OS enhancements for high availability, virtualization, In-Service Software Upgrades (ISSU), and security. In this book, you will discover support and configuration best practices for working with Layer 2 and Layer 3 protocols and networks, implementing multicasting, maximizing serviceability, providing consistent network and storage services, and much more. The authors present multiple command-line interface (CLI) commands, screen captures, realistic configurations, and troubleshooting tips—all based on their extensive experience working with customers who have successfully deployed Nexus switches in their data centers. Learn how Cisco NX-OS builds on and differs from IOS Work with NX-OS user modes, management interfaces, and system files Configure Layer 2 networking: VLANs/private VLANs, STP, virtual port channels, and unidirectional link detection Configure Layer 3 EIGRP, OSPF, BGP, and First Hop Redundancy Protocols (FHRPs) Set up IP multicasting with PIM, IGMP, and MSDP Secure NX-OS with SSH, Cisco TrustSec, ACLs, port security, DHCP snooping, Dynamic ARP inspection, IP Source Guard, keychains, Traffic Storm Control, and more Build high availability networks using process modularity and restart, stateful switchover, nonstop forwarding, and in-service software upgrades Utilize NX-OS embedded serviceability, including Switched Port Analyzer (SPAN), Smart Call Home, Configuration Checkpoint/Rollback, and NetFlow Use the NX-OS Unified Fabric to simplify infrastructure and provide ubiquitous network and storage services Run NX-OS on Nexus 1000V server-based software switches This book is part of the Networking Technology Series from Cisco Press®, which offers networking professionals valuable information for constructing efficient networks, understanding new technologies, and building successful careers.

*NX-OS and Cisco Nexus Switching* IBM Redbooks

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 *CCNA Data Center: Introducing Cisco Data Center Technologies Study Guide* Cisco Press

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

*Cisco Unified Computing System (UCS) (Data Center)* Cisco Press

Learn the art of designing, implementing, and managing Cisco's networking solutions on datacenters, wirelessly, security and mobility to set up an Enterprise network. About This Book Implement Cisco's networking solutions on datacenters and wirelessly, Cloud, Security, and Mobility Leverage Cisco IOS to manage network infrastructures. A practical guide that will show how to troubleshoot common issues on the network. Who This Book Is For This book is targeted at network designers and IT engineers who are involved in designing, configuring, and operating enterprise networks, and are in taking decisions to make the necessary network changes to meet newer business needs such as evaluating new technology choices, enterprise growth, and adding new services on the network. The reader is expected to have a general understanding of the fundamentals of networking, including the OSI stack and IP addressing. What You Will Learn Understand the network lifecycle approach Get to know what makes a good network design Design components and technology choices at various places in the network (PINS) Work on sample configurations for network devices in the LAN/ WAN/ DC, and the wireless domain Get familiar with the configurations and best practices for securing the network Explore best practices for network operations In Detail Most enterprises use Cisco networking equipment to design and implement their networks. However, some networks outperform networks in other enterprises in terms of performance and meeting new business demands, because they were designed with a visionary approach. The book starts by describing the various stages in the network lifecycle and covers the plan, build, and operate phases. It covers topics that will help network engineers capture requirements, choose the right technology, design and implement the network, and finally manage and operate the network. It divides the overall network into its constituents depending upon functionality, and describe the technologies used and the design considerations for each functional area. The areas covered include the campus wired network, wireless access network, WAN choices, datacenter technologies, and security technologies. It also discusses the need to identify business-critical applications on the network, and how to prioritize these applications by deploying QoS on the network. Each topic provides the technology choices, and the scenario, involved in choosing each technology, and provides configuration guidelines for configuring and implementing solutions in enterprise networks. Style and approach A step-by-step practical guide that ensures you implement Cisco solutions such as enterprise networks, cloud, and data centers, on small-to-large organizations.

**Cisco IOS 12.0 Bridging and IBM Network Solutions** IBM Redbooks

As organizations drive to transform and virtualize their IT infrastructures to reduce costs, and manage risk, networking is pivotal to success. Optimizing network performance, availability, adaptability, security, and cost is essential to achieving the maximum benefit from your infrastructure. In this IBM® Redbooks® publication, we address these requirements: Expertise to plan and design networks with holistic consideration of servers, storage, application performance, and manageability Networking solutions that enable investment protection with performance and cost options that match your environment Technology and expertise to design and implement and manage network security and resiliency Robust network management software for integrated, simplified management that lowers operating costs of complex networks IBM and Brocade have entered into an agreement to provide expanded network technology choices with the new IBM b-type Ethernet Switches and Routers, to provide an integrated end-to-end resiliency and security framework. Combined with the IBM vast data center design experience and the Brocade networking expertise, this portfolio represents the ideal convergence of strength and intelligence. For organizations striving to transform and virtualize their IT infrastructure, such a combination can help you reduce costs, manage risks, and prepare for the future. This book is meant to be used along with "IBM b-type Data Center Networking: Product Introduction and Initial Setup," SG24-7785.

*Cloud Services, Networking, and Management* Pearson Education

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

**End-to-end QoS Network Design** Cisco Press

Clouds are being positioned as the next-generation consolidated, centralized, yet federated IT infrastructure for hosting all kinds of IT platforms and for deploying, maintaining, and managing a wider variety of personal, as well as professional applications and services. Handbook of Research on Cloud Infrastructures for Big Data Analytics focuses exclusively on the topic of cloud-sponsored big data analytics for creating flexible and futuristic organizations. This book helps researchers and practitioners, as well as business entrepreneurs, to make informed decisions and consider appropriate action to simplify and streamline the arduous journey towards smarter enterprises.

**Handbook of Research on Cloud Infrastructures for Big Data Analytics** O'Reilly Media

The digital age has presented an exponential growth in the amount of data available to individuals looking to draw conclusions based on given or collected information across industries. Challenges associated with the analysis, security, sharing, storage, and visualization of large and complex data sets continue to plague data scientists and analysts alike as traditional data processing applications struggle to adequately manage big data. Big Data: Concepts, Methodologies, Tools, and Applications is a multi-volume compendium of research-based perspectives and solutions within the realm of large-scale and complex data sets. Taking a multidisciplinary approach, this publication presents exhaustive coverage of crucial topics in the field of big data including diverse applications, storage solutions, analysis techniques, and methods for searching and transferring large data sets, in addition to security issues. Emphasizing essential research in the field of data science, this publication is an ideal reference source for data analysts, IT professionals, researchers, and academics.

**Green Data Centers Monthly Newsletter June 2010** Cisco Press

**NX-OS and Cisco Nexus Switching Next-Generation Data Center Architectures Second Edition** The complete guide to planning, configuring, managing, and troubleshooting NX-OS in the enterprise—updated with new technologies and examples Using Cisco Nexus switches and the NX-OS operating system, data center professionals can build unified core networks that deliver unprecedented scalability, resilience, operational continuity, flexibility, and performance. NX-OS and Cisco Nexus Switching, Second Edition, is the definitive guide to applying these breakthrough technologies in real-world environments. This extensively updated edition contains five new chapters addressing a wide range of new technologies, including FabricPath, OTV, IPv6, QoS, VSG, Multi-Hop FCoE, LISP, MPLS, Layer 3 on Nexus 5000, and Config sync. It also presents a start-to-finish, step-by-step case study of an enterprise customer who migrated from Cisco Catalyst to a Nexus-based architecture, illuminated with insights that are applicable in virtually any enterprise data center. Drawing on decades of experience with enterprise customers, the authors cover every facet of deploying, configuring, operating, and troubleshooting NX-OS in today's data center. You'll find updated best practices for high availability, virtualization, security, L2/L3 protocol and network support, multicast, serviceability, provision of networking and storage services, and more. Best of all, the authors present all the proven commands, sample configurations, and tips you need to apply these best practices in your data center. Ron Fuller, CCIE No. 5851 (Routing and Switching/Storage Networking), Technical Marketing Engineer on Cisco's Nexus 7000 team, specializes in helping customers design end-to-end data center architectures. Ron has 21 years of industry experience, including 7 at Cisco. He has spoken at Cisco Live on VDCs, NX-OS multicast, and general design. David Jansen, CCIE No. 5952 (Routing/Switching), is a Cisco Technical Solutions Architect specializing in enterprise data center architecture. He has 20 years of industry experience, 15 of them at Cisco (6 as a solution architect); and has delivered several Cisco Live presentations on NX-OS and data center solutions. Matthew McPherson, senior systems engineer and solutions architect for the Cisco Central Select Operation, specializes in data center architectures. He has 12 years of experience working with service providers and large finance and manufacturing enterprises, and possesses deep technical knowledge of routing, switching, and security. Understand the NX-OS command line, virtualization features, and file system Utilize the NX-OS comprehensive Layer 2/Layer 3 support: vPC, Spanning Tree Protocol, Cisco FabricPath, EIGRP, OSPF, BGP, HSRP, GLBP, and VRRP Configure IP multicast with PIM, Auto-RP, and MSDP Secure your network with CTS, SGTs, ACLs, CoPP, and DAI Establish a trusted set of network devices with Cisco TrustSec Maximize availability with ISSU, stateful process restart/switchover, and non-stop forwarding Improve serviceability with SPAN, ERSPAN, configuration checkpoints/rollback, packet analysis, Smart Call Home, Python, and PoAP Unify storage and Ethernet fabrics with FCoE, NPV, and NPIV Take full advantage of Nexus 1000V in a virtualized environment Achieve superior QoS with MQ CLI, queuing, and marking Extend L2 networks across L3 infrastructure with Overlay Transport Virtualization (OTV) Deliver on SLAs by integrating MPLS application components such as L3 VPNs, traffic engineering, QoS, and mVPN Support mobility via the new Locator ID Separation Protocol (LISP) Walk step-by-step through a realistic Nexus and NX-OS data center migration

**The Policy Driven Data Center with ACI** Cisco Press

**THE ONLY AUTHORITATIVE, COMPREHENSIVE GUIDE TO VSPHERE STORAGE IMPLEMENTATION AND MANAGEMENT** Effective VMware virtualization storage planning and management has become crucial—but it can be extremely complex. Now, the leading VMware expert on storage completely demystifies the "black box" of vSphere storage and provides illustrated, step-by-step procedures for performing every key task associated with it. You'll gain the deep understanding you need to make better storage decisions, solve problems, and keep problems from occurring in the first place. Mostafa Khalil presents techniques based on years of personal experience helping customers troubleshoot storage in their vSphere production environments. With more experience than anyone else in the field, he combines expert guidelines, insights for better architectural design, best practices for both planning and management, common configuration details, and deep dives into both vSphere and third-party storage. Storage Implementation in vSphere® 5.0 fully explains each storage connectivity choice and protocol supported by VMware, introduces Pluggable Storage Architecture (PSA), and shows how to build on PSA with multipathing, failover, and ALUA. It thoroughly introduces Storage Virtualization Devices (SVDs) and VMDirectPath I/O, and shows how to drive powerful improvements in performance, flexibility, and manageability with VMFS 5 and VAAI. **COVERAGE INCLUDES** Understanding how FC, FCoE, and iSCSI interact with VMware vSphere 5 Implementing specific VMware capabilities on storage hardware from each leading vendor Avoiding, recognizing, and fixing misconfigurations and other problems Using third-party MPIO plug-ins certified with vSphere 5 and PSA Maximizing availability through multipathing and failover Implementing fixed and round-robin multipathing on arrays with

ALUA support Monitoring and optimizing virtual storage performance Managing vSphere-compatible file systems: VMFS and NFS Taking full advantage of VMDirectPath I/O Implementing heterogeneous storage configurations Presenting abstracted storage through virtual disks and Raw Device Mappings (RDMs) Using VMFS 5 to simplify management and improve scalability in large-scale environments Sharing storage and migrating more easily across multiple VMware vSphere instances Optimizing storage performance with VAAI-compliant devices Mostafa Khalil, Senior Staff Engineer with VMware Global Support Services, specializes in storage integration for virtual environments. He has worked for VMware for 13 years and supported all VMware virtualization products since Workstation for Linux 1.0 beta. Khalil has worked on most enterprise storage vendors' solutions and received engineering-level training for many of them. He has presented at every VMworld, and at VMware Partner Exchange, VMware User Group, and USENIX. ISBN-13: 978-0-321-79993-7 ISBN-10: 0-321-79993-3

**CCNA Cloud Complete Study Guide** Cisco Press

An information infrastructure is comprised of software, servers, storage, and networks, integrated and optimized to deliver timely, secure, and trusted information throughout the organization and to its clients and partners. With the explosive growth in data and information—coupled with demands for projects with rapid ROI—IT infrastructures and storage administrators are reaching a breaking point. IBM® can help with the changes needed to manage information availability, security, and regulatory and compliance requirements on a tighter budget. And because the health of any business often depends on its ability to take advantage of information in real time, a sound, intelligent information infrastructure becomes critical to supporting new growth initiatives. IBM offers an innovative approach to help you manage information growth more effectively and mitigate risks with a dynamic infrastructure that efficiently and securely stores and protects information, and optimizes information access. You can control, protect, manage, and gain new intelligence from your information with the IBM leading-edge Information Infrastructure products, services and integrated solutions, supported by world-class expertise and access to top experts from around the world. This IBM Redbooks® publication provides an overview of the IBM Information Infrastructure solutions that are designed to help you manage the information explosion and address challenges of information compliance, availability, retention, and security. This will lead your company toward improved productivity, service delivery, and reduced risk, while streamlining costs.

**Building Data Centers with VXLAN BGP EVPN** Information Gatekeepers Inc

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

**Designing Cisco Network Service Architectures (ARCH)** IGI Global

Using Fibre Channel over Ethernet (FCoE) and related technologies, data centers can consolidate data traffic onto a single network switch, simplifying their environments, promoting virtualization, and substantially reducing power and cooling costs. This emerging technology is drawing immense excitement, but few enterprise IT decision-makers and implementers truly understand it. I/O Consolidation in the Data Center is the only complete, up-to-date guide to FCoE. FCoE innovators Silvano Gai and Claudio DeSanti (chair of the T11 FCoE standards working group) systematically explain the technology: its benefits, tradeoffs, and what it will take to implement it successfully in production environments. Unlike most other discussions of FCoE, this book fully reflects the final, recently-approved industry standard. The authors also present five detailed case studies illustrating typical FCoE adoption scenarios, as well as an extensive Q and A section addressing the issues enterprise IT professionals raise most often. This is a fully updated version of Silvano Gai's privately-published book on FCoE, written for leading FCoE pioneer Nuova Systems before the company was acquired by Cisco. Nearly 12,000 copies of that book have already been distributed, demonstrating the immense interest in FCoE technology, and the scarcity of reliable information that has existed about it.

**Programming and Automating Cisco Networks** Addison-Wesley Professional

Cisco has announced big changes to its certification program. As of February 24, 2020, all current certifications will be retired, and Cisco will begin offering new certification programs. The good news is if you're working toward any current CCNA certification, keep going. You have until February 24, 2020 to complete your current CCNA. If you already have CCENT/ICND1 certification and would like to earn CCNA, you have until February 23, 2020 to complete your CCNA certification in the current program. Likewise, if you're thinking of completing the current CCENT/ICND1, ICND2, or CCNA Routing and Switching certification, you can still complete them between now and February 23, 2020. Increase the value of your organization's cloud network—and invest in your education The Cisco Cloud certification validates the skill set of individuals on industry-leading cloud solutions and best

practices, as well as offering job role-based curricula for all levels of an IT staff. CCNA Cloud Complete Study Guide prepares you to take two required exams: 210-451, Understanding Cisco Cloud Fundamentals, and 210-455, Introducing Cisco Cloud Administration. It covers everything you can expect to encounter on the exams and also gives you a year of FREE access to Sybex's superior online interactive learning environment and test bank, including chapter tests, practice exams, a glossary of key terms, and electronic flashcards. Cisco's CCNA Cloud certification covers cloud characteristics and models, cloud deployment, and basic knowledge of cloud compute, cloud networking, and cloud storage. It also covers cloud infrastructure administration and reporting, chargeback and billing reports, cloud provisioning, cloud systems management and monitoring, and cloud remediation. With thorough coverage, practical instruction, and expert insight, this book provides an ideal resource for Exam 210-451 and Exam 210-455 preparation. • Includes an opening list of exam topics • Provides valuable hands-on exercises • Offers practical real-world examples • Distills in-depth perspective from cloud computing experts This book is the perfect resource for anyone seeking to earn the challenging, but rewarding CCNA Cloud certification.

[Data Center Fundamentals](#) Pearson 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/FabricPath 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

[Troubleshooting Cisco Nexus Switches and NX-OS](#) Pearson Education

This IBM® Redbooks® publication is an IBM and Cisco collaboration that articulates how IBM and Cisco can bring the benefits of their respective companies to the modern data center. It documents the architectures, solutions, and benefits that can be achieved by implementing a data center

based on IBM server, storage, and integrated systems, with the broader Cisco network. We describe how to design a state-of-the-art data center and networking infrastructure combining Cisco and IBM solutions. The objective is to provide a reference guide for customers looking to build an infrastructure that is optimized for virtualization, is highly available, is interoperable, and is efficient in terms of power and space consumption. It will explain the technologies used to build the infrastructure, provide use cases, and give guidance on deployments.

[Introduction to Computer Networks and Cybersecurity](#) Pearson Education

This is Cisco's official, comprehensive self-study resource for preparing for the new CCNA Data Center DCICT 640-916 certification exam. Designed for all data center administrators and professionals seeking Cisco DCICT certification, it covers every exam objective concisely and logically, with extensive teaching features designed to promote retention and understanding. Readers will find clear and practical coverage of Cisco's entire exam blueprint.

**Interconnecting Data Centers Using VPLS (Ensure Business Continuance on Virtualized Networks by Implementing Layer 2 Connectivity Across Layer 3)** Cisco Press

Learn to deploy Juniper Data Centers with EVPN VXLAN and master the only intent-based multivendor solution for deploying and monitoring EVPN-based VXLAN fabrics! Deploying Juniper Data Centers with EVPN VXLAN is designed for engineers and architects designing, deploying, and/or maintaining small to large data centers. This book will increase productivity and streamline processing and communication by helping you understand BGP EVPN-based VXLAN, data center design and deployment using Junos, and interconnecting multiple data centers for various deployment applications. Aninda Chatterjee's straightforward prose and industry experience also gives you the foundational knowledge necessary for Juniper Data Center certification from the JNCIA-DC to the JNCIE-DC. The book's structure is unique in its chapter-by-chapter approach with one-pager quick reference guides at the end of the book. The author also puts theory to practice using a combination of packet captures and packet walks. Learn to design, deploy, and maintain a data center using Junos OS and Junos Evolved. Understand how to troubleshoot BGP EVPN-based VXLAN. Maximize learning with with packet captures and packet walks. Build foundational knowledge for Juniper Data Center certification. Gain a deep understanding of data center design.

[Data Center Virtualization Fundamentals](#) Pearson Education

Cisco has announced big changes to its certification program. As of February 24, 2020, all current certifications will be retired, and Cisco will begin offering new certification programs. The good news is if you're working toward any current CCNA certification, keep going. You have until February 24, 2020 to complete your current CCNA. If you already have CCENT/ICND1 certification and would like to earn CCNA, you have until February 23, 2020 to complete your CCNA certification in the current program. Likewise, if you're thinking of completing the current CCENT/ICND1, ICND2, or CCNA Routing and Switching certification, you can still complete them between now and February 23, 2020. Complete theory and practice for the CCNA Data Center Technologies exam CCNA Data Center, Introducing Cisco Data Center Technologies Study Guide is your comprehensive study guide for exam 640-916. Authors Todd Lammle and Todd Montgomery, authorities on Cisco networking, guide you through 100% of all exam objectives with expanded coverage of key exam topics, and hands-on labs that help you become confident in dealing with everyday challenges. You'll get access to the free Nexus switch simulator that allows you to try your hand at what you've learned without expensive software, plus bonus study aids, such as electronic flashcards, a practice exam, and a searchable PDF glossary of terms. Coverage includes Data Center networking and virtualization, storage networking, unified fabric, Cisco UCS configuration, Data Center services, and much more, for complete exam preparation. This is your guide to study for the entire second (and final) exam required for certification Review networking principles, products, and technologies Understand Nexus 1000V and Data Center virtualization Learn the principles and major configurations of Cisco UCS Practice hands-on solutions you'll employ on the job Prepare for using Cisco's Unified Data Center, which unifies computing, storage, networking, and management resources

**Using TRILL, FabricPath, and VXLAN** Elsevier

Cisco IOS 12.0 Bridging and IBM Network Solutions contains configuration scenarios and command reference information that demonstrate bridging and IBM networking options. Written for network administrators, this guide explores transparent and source-route transparent bridging, Source-Route Bridging (SRB), data link switching plus (DLSw+), serial tunnel and block serial tunnel, SDLC and LLC2 parameters, and advanced peer-to-peer networking.