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# Data Center Virtualization Fundamentals By Gustavo Alessandro Andrade Santana

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Introduction to Storage Area Networks  
Servers, Storage, and Voice over IP  
VMware Certified Associate - Data Center Virtualization  
Architecture, Concepts, and Methodology  
VCA-DCV VMware Certified Associate on vSphere Study Guide  
Virtual Routing in the Cloud  
Architecture, Protocols, and Tools  
Data Center Virtualization Fundamentals  
VMware vSphere Design  
Handbook on Data Centers  
Sams Teach Yourself Networking in 24 Hours  
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Data Center Fundamentals  
Cloud Computing  
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Cloud, Converged, and Virtual Fundamental Server Storage I/O Tradecraft  
The Datacenter as a Computer  
Building Data Centers with VXLAN BGP EVPN  
Demystifying HCI  
Cloud and Virtual Data Storage Networking  
A Cisco NX-OS Perspective  
Designing Warehouse-Scale Machines, Third Edition  
Automating the Virtualized Data Center  
Understanding Cloud-based Data Center Networks  
Administering Data Centers  
A Data Visualization Guide for Business Professionals  
Exam 55 Offic Cert Guide  
CCNP and CCIE Data Center Core DCCOR 350-601 Official Cert Guide  
Zero Trust Networks  
Cloud Data Centers and Cost Modeling

## Microsoft Azure Essentials - Fundamentals of Azure Virtualization Essentials

*Data Center  
Virtualization  
Fundamentals By  
Gustavo Alessandro  
Andrade Santana*

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### **KRISTA ANTON**

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#### Introduction to Storage Area Networks

Springer Science & Business Media

The perimeter defenses guarding your network perhaps are not as secure as you think. Hosts behind the firewall have no defenses of their own, so when a host in the "trusted" zone is breached, access to your data center is not far behind.

That's an all-too-familiar scenario today. With this practical book, you'll learn the principles behind zero trust architecture, along with details necessary to implement it. The Zero Trust Model treats all hosts as if they're internet-facing, and considers the entire network to be compromised and hostile. By taking this approach, you'll focus on building strong authentication, authorization, and encryption throughout, while providing compartmentalized access and better operational agility. Understand how perimeter-based defenses have evolved to become the broken model we use today. Explore two case studies of zero trust in production networks on the client side (Google) and on the server side (PagerDuty). Get example configuration for open source tools that you can use to build a zero trust network. Learn how to migrate from a perimeter-based network to a zero trust network in production.

#### **Servers, Storage, and Voice over IP**

Cisco Press

Despite the buzz surrounding the cloud computing, only a small percentage of

organizations have actually deployed this new style of IT—so far. If you're planning your long-term cloud strategy, this practical book provides insider knowledge and actionable real-world lessons regarding planning, design, operations, security, and application transformation. This book teaches business and technology managers how to transition their organization's traditional IT to cloud computing. Rather than yet another book trying to sell or convince readers on the benefits of clouds, this book provides guidance, lessons learned, and best practices on how to design, deploy, operate, and secure an enterprise cloud based on real-world experience. Author James Bond provides useful guidance and best-practice checklists based on his field experience with real customers and cloud providers. You'll view cloud services from the perspective of a consumer and as an owner/operator of an enterprise private or hybrid cloud, and learn valuable lessons from successful and less-than-successful organization use-case scenarios. This is the information every CIO needs in order to make the business and technical decisions to finally execute on their journey to cloud computing. Get updated trends and definitions in cloud computing, deployment models, and for building or buying cloud services. Discover challenges in cloud operations and management not foreseen by early adopters. Use real-world lessons to plan and build an enterprise private or hybrid cloud. Learn how to assess, port, and migrate legacy applications to the cloud. Identify security threats and vulnerabilities unique to the cloud.

Employ a cloud management system for your enterprise (private or multi-provider hybrid) cloud ecosystem Understand the challenges for becoming an IT service broker leveraging the power of the cloud

*VMware Certified Associate - Data Center Virtualization* Data Center Virtualization Fundamentals

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

*Architecture, Concepts, and Methodology* IBM Redbooks

This book describes warehouse-scale computers (WSCs), the computing platforms that power cloud computing and all the great web services we use every day. It discusses how these new systems treat the datacenter itself as one massive computer designed at warehouse scale, with hardware and software working in concert to deliver good levels of internet service performance. The book details the

architecture of WSCs and covers the main factors influencing their design, operation, and cost structure, and the characteristics of their software base. Each chapter contains multiple real-world examples, including detailed case studies and previously unpublished details of the infrastructure used to power Google's online services. Targeted at the architects and programmers of today's WSCs, this book provides a great foundation for those looking to innovate in this fascinating and important area, but the material will also be broadly interesting to those who just want to understand the infrastructure powering the internet. The third edition reflects four years of advancements since the previous edition and nearly doubles the number of pictures and figures. New topics range from additional workloads like video streaming, machine learning, and public cloud to specialized silicon accelerators, storage and network building blocks, and a revised discussion of data center power and cooling, and uptime. Further discussions of emerging trends and opportunities ensure that this revised edition will remain an essential resource for educators and professionals working on the next generation of WSCs.

VCA-DCV VMware Certified Associate on vSphere Study Guide John Wiley & Sons  
Data Center Virtualization Fundamentals Pearson Education  
Virtual Routing in the Cloud John Wiley & Sons  
Use Visual Studio® Team Foundation Server 2012 and Agile Methods to Deliver Higher Value Software Faster  
This is the definitive guide to applying agile development and modern software engineering practices with Visual Studio Team Foundation Server 2012—Microsoft's complementary Application Lifecycle Management (ALM)

platform. Written by the Microsoft Visual Studio product owner and a long-time Team Foundation Server implementation specialist, it focuses on solving real development challenges, systematically eliminating waste, improving transparency, and delivering better software more quickly and painlessly. Coverage includes • Accelerating the “flow of value” to customers, with a transparent backlog, PowerPoint Storyboarding, VS 2012 feedback requests, and a “usability lab” right into your customers’ hands • Driving quality upstream to uncover hidden architectural patterns, ensure cleaner code, fix multiple recurring “cloned” bugs at once, ensure the definition of done with continuous integration and deployment in a reliable build process • Eliminating “no repro” bugs with VS 2012's six powerful mechanisms for more accurate fault identification and use of virtualized test environments • Using Scrum or other Agile methods with Process Templates effectively across distributed teams in large organization by automating burndowns and dashboards to identify “early warning signals” of emerging problems with quality or maintainability • Staying in the groove by storing the state of your work and environment with shelvesets, to let you handle interruptions smoothly • Leveraging VS 2012's new support for multiple Microsoft and open source unit testing frameworks in your IDE and continuous integration pipeline • Performing exploratory testing to uncover bugs in surprising places and testing immersive Windows 8 apps • Rapidly improving team development and collaboration with the hosted Team Foundation Service Whatever your development role, this book will help you apply modern software development

practices using Visual Studio Team Foundation Server 2012 to focus on what really matters: building software that begins delivering exceptional value sooner and keeps delighting customers far into the future.

*Architecture, Protocols, and Tools*  
"O'Reilly Media, Inc."

The complete guide to building and managing next-generation data center network fabrics with VXLAN and BGP EVPN. This is the only comprehensive guide and deployment reference for building flexible data center network fabrics with VXLAN and BGP EVPN technologies. Writing for experienced network professionals, three leading Cisco experts address everything from standards and protocols to functions, configurations, and operations. The authors first explain why and how data center fabrics are evolving, and introduce Cisco's fabric journey. Next, they review key switch roles, essential data center network fabric terminology, and core concepts such as network attributes, control plane details, and the associated data plane encapsulation. Building on this foundation, they provide a deep dive into fabric semantics, efficient creation and addressing of the underlay, multi-tenancy, control and data plane interaction, forwarding flows, external interconnectivity, and service appliance deployments. You'll find detailed tutorials, descriptions, and packet flows that can easily be adapted to accommodate customized deployments. This guide concludes with a full section on fabric management, introducing multiple opportunities to simplify, automate, and orchestrate data center network fabrics. Learn how changing data center requirements have driven the evolution to overlays, evolved control planes, and VXLAN BGP EVPN

spine-leaf fabrics. Discover why VXLAN BGP EVPN fabrics are so scalable, resilient, and elastic. Implement enhanced unicast and multicast forwarding of tenant traffic over the VXLAN BGP EVPN fabric. Build fabric underlays to efficiently transport uni- and multi-destination traffic. Connect the fabric externally via Layer 3 (VRF-Lite, LISP, MPLS L3VPN) and Layer 2 (VPC). Choose your most appropriate Multi-POD, multifabric, and Data Center Interconnect (DCI) options. Integrate Layer 4-7 services into the fabric, including load balancers and firewalls. Manage fabrics with POAP-based day-0 provisioning, incremental day 0.5 configuration, overlay day-1 configuration, or day-2 operations.  
*Data Center Virtualization Fundamentals*  
Cisco Press

This handbook offers a comprehensive review of the state-of-the-art research achievements in the field of data centers. Contributions from international, leading researchers and scholars offer topics in cloud computing, virtualization in data centers, energy efficient data centers, and next generation data center architecture. It also comprises current research trends in emerging areas, such as data security, data protection management, and network resource management in data centers. Specific attention is devoted to industry needs associated with the challenges faced by data centers, such as various power, cooling, floor space, and associated environmental health and safety issues, while still working to support growth without disrupting quality of service. The contributions cut across various IT data technology domains as a single source to discuss the interdependencies that need to be supported to enable a virtualized, next-

generation, energy efficient, economical, and environmentally friendly data center. This book appeals to a broad spectrum of readers, including server, storage, networking, database, and applications analysts, administrators, and architects. It is intended for those seeking to gain a stronger grasp on data center networks: the fundamental protocol used by the applications and the network, the typical network technologies, and their design aspects. The Handbook of Data Centers is a leading reference on design and implementation for planning, implementing, and operating data center networks.

**VMware vSphere Design** Sams Publishing

Trust the Official Cert Guide series from VMware Press to help you learn, prepare, and practice for exam success. They are the only VMware-authorized self-study books and are built with the objective of providing assessment, review, and practice to help ensure you are fully prepared for your certification exam. Master VMware certification exam topics Assess your knowledge with chapter-opening quizzes Review key concepts with exam preparation tasks Reinforce your learning with web-based practice exams An excellent "fundamentals" book on vSphere ¿ The Official VCA-DCV Certification Guide focuses specifically on the objectives for the VCA-DCV, the VMware Certified Associate on Data Center Virtualization exam (VCAD510). Experts Matt Vandenbeld and Jonathan MacDonald share preparation hints and test-taking tips, helping you identify areas of weakness and improve both your conceptual knowledge and hands-on skills. Material is presented in a concise manner, focusing on increasing your understanding and retention of

exam topics. ¿ Well regarded for its level of detail, assessment features, comprehensive design scenarios, and challenging review questions and exercises, this official study guide helps you master the concepts and techniques that will enable you to succeed on the exam the first time. The official study guide helps you master all the topics on the VCA-DCV exam, including the following: ¿ Datacenter virtualization: What is it and what are the components? Business challenges solved by virtualization Core components of vSphere: the virtual machine, ESXI, high availability vSphere storage, including physical versus virtual, storage types, thin provisioning, and more vSphere networking fundamentals, physical versus virtual switches, components, policies, I/O Mapping business challenges to vSphere solutions ¿ The Official VCA-DCV Certification Guide is part of a recommended learning path from VMware that includes simulation and hands-on training from authorized VMware instructors and self-study products from VMware Press. To find out more about instructor-led training, e-learning, and hands-on instruction offered worldwide, please visit [www.vmware.com/training](http://www.vmware.com/training). ¿

**Handbook on Data Centers** Springer 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.

#### Sams Teach Yourself Networking in 24 Hours Morgan Kaufmann

Cloud Networking: Understanding Cloud-Based Data Center Networks explains the evolution of established networking technologies into distributed, cloud-based networks. Starting with an overview of cloud technologies, the book explains how cloud data center networks leverage distributed systems for network

virtualization, storage networking, and software-defined networking. The author offers insider perspective to key components that make a cloud network possible such as switch fabric technology and data center networking standards. The final chapters look ahead to developments in architectures, fabric technology, interconnections, and more. By the end of the book, readers will understand core networking technologies and how they're used in a cloud data center. Understand existing and emerging networking technologies that combine to form cloud data center networks Explains the evolution of data centers from enterprise to private and public cloud networks Reviews network virtualization standards for multi-tenant data center environments Includes cutting-edge detail on the latest switch fabric technologies from the networking team in Intel

#### Day One Data Center Fundamentals

"O'Reilly Media, Inc."

If you create, manage, operate, or configure systems running in the cloud, you're a cloud engineer--even if you work as a system administrator, software developer, data scientist, or site reliability engineer. With this book, professionals from around the world provide valuable insight into today's cloud engineering role. These concise articles explore the entire cloud computing experience, including fundamentals, architecture, and migration. You'll delve into security and compliance, operations and reliability, and software development. And examine networking, organizational culture, and more. You're sure to find 1, 2, or 97 things that inspire you to dig deeper and expand your own career. "Three Keys to Making the Right Multicloud Decisions," Brendan O'Leary "Serverless Bad

Practices," Manases Jesus Galindo Bello "Failing a Cloud Migration," Lee Atchison "Treat Your Cloud Environment as If It Were On Premises," Iyana Garry "What Is Toil, and Why Are SREs Obsessed with It?", Zachary Nickens "Lean QA: The QA Evolving in the DevOps World," Theresa Neate "How Economies of Scale Work in the Cloud," Jon Moore "The Cloud Is Not About the Cloud," Ken Corless "Data Gravity: The Importance of Data Management in the Cloud," Geoff Hughes "Even in the Cloud, the Network Is the Foundation," David Murray "Cloud Engineering Is About Culture, Not Containers," Holly Cummins

Data Center Fundamentals CRC Press

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

**Cloud Computing** "O'Reilly Media, Inc."

The complete guide to provisioning and managing cloud-based Infrastructure as a Service (IaaS) data center solutions. Cloud computing will revolutionize the way IT resources are deployed, configured, and managed for years to come. Service providers and customers each stand to realize tremendous value from this paradigm shift-if they can take advantage of it. Cloud Computing brings together the realistic, start-to-finish guidance they need to plan, implement, and manage cloud solution architectures for tomorrow's virtualized data centers.



It introduces cloud 'newcomers' to essential concepts, and offers experienced operations professionals detailed guidance on delivering Infrastructure as a Service (IaaS), Platform as a Service (PaaS), and Software as a Service (SaaS). This book's replicable solutions and fully-tested best practices will help enterprises, services providers, consultants, and Cisco partners meet the challenge of provisioning end-to-end cloud infrastructures. Drawing on extensive experience working with leading cloud vendors and integrators, the authors present detailed operations workflow examples, proven techniques for operating cloud-based network, compute, and storage infrastructure; a comprehensive management reference architecture; and a complete case study demonstrating rapid, lower-cost solutions design. Cloud Computing will be an indispensable resource for all network/IT professionals and managers involved with planning, implementing, or managing the next generation of cloud computing services.

- Review the key concepts needed to successfully deploy and cloud-based services
- Transition common enterprise design patterns and use cases to the cloud
- Master architectural principles and infrastructure design for 'real-time' managed IT services
- Understand the Cisco approach to cloud-related technologies, systems, and services
- Develop a cloud management architecture using ITIL, TMF, and ITU-TMN standards
- Implement best practices for cloud service provisioning, activation, and management
- Automate cloud infrastructure to simplify service delivery, monitoring and assurance
- Choose and implement the right billing/chargeback approaches for your

business

- Design and build IaaS services, from start to finish
- Manage the unique capacity challenges associated with sporadic, real-time demand
- Provide a consistent and optimal cloud user experience

This book is part of the Networking Technology Series from Cisco Press, which offers networking professionals valuable information for constructing efficient networks, understanding new technologies, and building successful careers.

*Hyperconverged Infrastructure Data Centers* "O'Reilly Media, Inc."

"This book covers a wide spectrum of topics relevant to implementing and managing a modern data center. The chapters are comprehensive and the flow of concepts is easy to understand." - Cisco reviewer

Gain a practical knowledge of data center concepts To create a well-designed data center (including storage and network architecture, VoIP implementation, and server consolidation) you must understand a variety of key concepts and technologies. This book explains those factors in a way that smoothes the path to implementation and management. Whether you need an introduction to the technologies, a refresher course for IT managers and data center personnel, or an additional resource for advanced study, you'll find these guidelines and solutions provide a solid foundation for building reliable designs and secure data center policies.

- \* Understand the common causes and high costs of service outages
- \* Learn how to measure high availability and achieve maximum levels
- \* Design a data center using optimum physical, environmental, and technological elements
- \* Explore a modular design for cabling, Points of Distribution, and WAN

connections from ISPs \* See what must be considered when consolidating data center resources \* Expand your knowledge of best practices and security \* Create a data center environment that is user- and manager-friendly \* Learn how high availability, clustering, and disaster recovery solutions can be deployed to protect critical information \* Find out how to use a single network infrastructure for IP data, voice, and storage

Cloud Networking Pearson Education Software-Defined Data Infrastructures Essentials provides fundamental coverage of physical, cloud, converged, and virtual server storage I/O networking technologies, trends, tools, techniques, and tradecraft skills. From webscale, software-defined, containers, database, key-value store, cloud, and enterprise to small or medium-size business, the book is filled with techniques, and tips to help develop or refine your server storage I/O hardware, software, and services skills. Whether you are new to data infrastructures or a seasoned pro, you will find this comprehensive reference indispensable for gaining as well as expanding experience with technologies, tools, techniques, and trends. We had a front row seat watching Greg present live in our education workshop seminar sessions for ITC professionals in the Netherlands material that is in this book. We recommend this amazing book to expand your converged and data infrastructure knowledge from beginners to industry veterans. —Gert and Frank Brouwer, Brouwer Storage Consultancy Software-Defined Data Infrastructures Essentials provides the foundational building blocks to improve your craft in several areas including applications, clouds, legacy, and more. IT professionals, as well as sales

professionals and support personnel, stand to gain a great deal by reading this book.—Mark McSherry, Oracle Regional Sales Manager Looking to expand your data infrastructure IQ? From CIOs to operations, sales to engineering, this book is a comprehensive reference, a must read for IT infrastructure professionals, beginners to seasoned experts.—Tom Becchetti, Advisory Systems Engineer Greg Schulz has provided a complete ‘toolkit’ for storage management along with the background and framework for the storage or data infrastructure professional or those aspiring to become one.—Greg Brunton, Experienced Storage and Data Management Professional

Best Practices for Transforming Legacy IT Cisco Press

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.

VCAD-510 Cisco Press

Master the basics of data centers to build server farms that enhance your Web site performance Learn design guidelines that show how to deploy

server farms in highly available and scalable environments Plan site performance capacity with discussions of server farm architectures and their real-life applications to determine your system needs Today's market demands that businesses have an Internet presence through which they can perform e-commerce and customer support, and establish a presence that can attract and increase their customer base. Underestimated hit ratios, compromised credit card records, perceived slow Web site access, or the infamous "Object Not Found" alerts make the difference between a successful online presence and one that is bound to fail. These challenges can be solved in part with the use of data center technology. Data centers switch traffic based on information at the Network, Transport, or Application layers. Content switches perform the "best server" selection process to direct users' requests for a specific service to a server in a server farm. The best server selection process takes into account both server load and availability, and the existence and consistency of the requested content. Data Center Fundamentals helps you understand the basic concepts behind the design and scaling of server farms using data center and content switching technologies. It addresses the principles and concepts needed to take on the most common challenges encountered during planning, implementing, and managing Internet and intranet IP-based server farms. An in-depth analysis of the data center technology with real-life scenarios make Data Center Fundamentals an ideal reference for understanding, planning, and designing Web hosting and e-commerce environments.

Energy Efficient Thermal Management of

### Data Centers VMWare Press

“This book comprehensively discusses design considerations for the truly energy efficient data center.” Scott Davis, Chief Data Center Architect, Office of the CTO, VMware, Inc. This Book Isn't About “Evangelizing” Green It: It's About Getting Down in the Trenches and Making It Work In Foundations of Green IT, a team of leading Green IT consultants presents the detailed technical information data center professionals need to systematically identify the right improvements, implement them, maximize savings, and accurately calculate business value. Marty Poniatowski and his team present comprehensive case studies reflecting their unsurpassed Green IT experience, complete with detailed implementation diagrams and performance information. You'll find independent, detailed coverage of solutions from HP, VMware, EMC, Cisco, and other leading vendors, with optimized sample designs and realistic ROI projections. Whether you're a CIO or IT director, architect or administrator, if you want to improve IT efficiency, this is your definitive resource. Three comprehensive, start-to-finish case studies Analyze current environments, set goals, define implementation plans, and calculate ROI for:

- Server and desktop consolidation and virtualization
- Data center backup/recovery/archiving, including replication
- Networking, including VoIP background

Plus practical coverage of these Green IT topics:

- Designing data centers for greater efficiency and lower power usage
- Leveraging cloud computing
- Consolidating Microsoft SQL Server instances
- Reducing PC-related power usage and waste

About CDI, the company behind this book: This book was written collaboratively by many CDI

technical experts, led by Marty Poniatowski. CDI is an infrastructure services firm with practices focusing on virtualization, storage, networking, data center design, and other “green” services. It has clients in all industries, notably financial services, pharmaceuticals, and healthcare.

### **Building Secure Systems in**

### **Untrusted Networks** Cisco Press

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

- Review the fundamentals of cloud virtualization, multitenant data-center design, and software-defined networking
- Understand the Cisco CSR 1000V's role, features, and infrastructure requirements
- Compare server

hypervisor technologies for managing VM hardware with CSR 1000V deployments · Understand CSR 1000V software architecture, control and data-plane design, licensing requirements, and packet flow · Walk through common virtual router scenarios and configurations, including multiple cloud and data center examples · Integrate CSR 1000V into the OpenStack SDN framework, and use its APIs to solve specific problems · Master a best-

practice workflow for deploying the CSR 1000V · Use the Cisco management tools to automate, orchestrate, and troubleshoot virtualized routing  
Category: Networking/Cloud Computing  
Covers: Cloud Services Router This book is part of the Networking Technology Series from Cisco Press, which offers networking professionals valuable information for constructing efficient networks, understanding new technologies, and building successful careers

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