

# Cisco Unified Computing System Ucs Data Center A Complete Reference Guide To The Cisco Data Center Virtualization Server Architecture Networking Technology

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

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

Understand and implement VMware Virtual SAN: the heart of tomorrow's Software-Defined Datacenter (SDDC) VMware's breakthrough Software-Defined Datacenter (SDDC) initiative can help you virtualize your entire datacenter: compute, storage, networks, and associated services. Central to SDDC is VMware Virtual SAN (VSAN): a fully distributed storage architecture seamlessly integrated into the hypervisor and capable of scaling to meet any enterprise storage requirement. Now, the leaders of VMware's wildly popular Virtual SAN previews have written the first authoritative guide to this pivotal technology. You'll learn what Virtual SAN is, exactly what it offers, how to implement it, and how to maximize its value. Writing for administrators, consultants, and architects, Cormac Hogan and Duncan Epping show how Virtual SAN implements both object-based storage and a policy platform that simplifies VM storage placement. You'll learn how Virtual SAN and vSphere work together to dramatically improve resiliency, scale-out storage functionality, and control over QoS.

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*Both an up-to-the-minute reference and hands-on tutorial, Essential Virtual SAN uses realistic examples to demonstrate Virtual SAN's most powerful capabilities. You'll learn how to plan, architect, and deploy Virtual SAN successfully, avoid gotchas, and troubleshoot problems once you're up and running. Coverage includes Understanding the key goals and concepts of Software-Defined Storage and Virtual SAN technology Meeting physical and virtual requirements for safe Virtual SAN implementation Installing and configuring Virtual SAN for your unique environment Using Storage Policy Based Management to control availability, performance, and reliability Simplifying deployment with VM Storage Policies Discovering key Virtual SAN architectural details: caching I/O, VASA, witnesses, pass-through RAID, and more Ensuring efficient day-to-day Virtual SAN management and maintenance Interoperating with other VMware features and products Designing and sizing Virtual SAN clusters Troubleshooting, monitoring, and performance optimization*

*As a final exam preparation tool, the Cisco DCUCI Quick Reference provides a concise review of all objectives on the new DC Unified Computing Implementation Exam (642-983). This eBook provides you with detailed, graphical-based information, highlighting only the key topics in cram-style format. With this document as your guide, you will review topics on performing administrative tasks in UCS, UCS*

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Connectivity, deploying servers, and identifying solutions in UCS. This fact-filled Quick Reference allows you to get all-important information at a glance, helping you to focus your study on areas of weakness and to enhance memory retention of essential exam concepts. 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

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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

CCNA Data Center DCICT 200-155 Official Cert Guide  
I/O Consolidation in the Data Center  
Implementing a VersaStack Solution by Cisco and IBM with IBM FlashSystem 5030, Cisco UCS Mini, Hyper-V, and SQL Server  
Essential Virtual San  
Exam 66 Official Cert ePub \_1  
Developing Innovative Use Cases

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All you need to know to plan, deploy, and run virtual infrastructure with VMware vSphere 5 - including secrets nobody else will tell you! \* Fully covers planning, implementing, operating, and managing vSphere 5. \* Brings together key techniques in a start-to-finish case study. \* Offers expert guidance on overcoming common VMware pitfalls, problems, and obstacles to 100% virtualization. \* By two leading experts, including one of the world's first holders of VMware's elite VCDX certification. To make the most of VMware's vSphere 5, IT professionals need knowledge, tips, and insights they'll never find in the manuals - or in any book, until now! In *Managing and Optimizing vSphere Deployments*, two world-class VMware experts offer start-to-finish lessons for vSphere planning, implementation, operation, management, and troubleshooting: expert insights drawn from their own unsurpassed 'in-the-trenches' consulting experience. The authors focus on the most crucial techniques VMware professionals need, providing guidance optimized for the new vSphere 5, and frameworks that will support the evolution of virtual infrastructure for years to come. They present scenarios and case studies drawn from real-world data, addressing areas ranging from sizing and performance to redundancy. Coverage includes: \* Smoothly integrating vSphere 5 into current environments and considerations. \* Overcoming roadblocks to 100% virtualization. \* Establishing a more stable infrastructure. \* Choosing hardware and making optimal configuration decisions. \* Automating tasks and maximizing availability. \* Efficiently managing updates, patches, and upgrades. \* Monitoring vSphere 5 with tools

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provided by VMware and its community. \*Planning for growth, and much more

VersaStack, an IBM® and Cisco integrated infrastructure solution, combines computing, networking, and storage into a single integrated system. It combines the Cisco Unified Computing System (Cisco UCS) Integrated Infrastructure with IBM Spectrum Virtualize™, which includes IBM FlashSystem® storage offerings, for quick deployment and rapid time to value for the implementation of modern infrastructures. This IBM Redbooks® publication covers the preferred practices for implementing a VersaStack Solution with IBM FlashSystem 5030, Cisco UCS Mini, Hyper-V 2016, and Microsoft SQL Server. Cisco UCS Mini is optimized for branch and remote offices, point-of-sale locations, and smaller IT environments. It is the ideal solution for customers who need fewer servers but still want the comprehensive management capabilities provided by Cisco UCS Manager. The IBM FlashSystem 5030 delivers efficient, entry-level configurations that are designed to meet the needs of small and midsize businesses. Designed to provide organizations with the ability to consolidate and share data at an affordable price, the IBM FlashSystem 5030 offers advanced software capabilities such as clustering, IBM Easy Tier®, replication and snapshots that are found in more expensive systems. This book is intended for pre-sales and post-sales technical support professionals and storage administrators who are tasked with deploying a VersaStack solution with Hyper-V 2016 and Microsoft SQL Server.

Cisco Unified Customer Voice Portal Building Unified Contact Centers Rue Green,

CCIE® No. 9269 The definitive guide to deploying Cisco Unified Customer Voice Portal IVRs in any contact center environment Thousands of companies are replacing legacy ACD/TDM-based contact centers with pure IP-based unified contact center solutions. One of these solutions is quickly earning market leadership: Cisco Unified Customer Voice Portal (CVP). Now, one of the leading Cisco CVP experts brings together everything network and telephony professionals need to successfully implement production Interactive Voice Response (IVR) solutions with CVP: architectural guidelines, deployment best practices, detailed insights for design and sizing, and more. CCIE Rue Green guides you through designing unified contact centers with CVP, and deploying proven infrastructures to support your designs. The author first explains CVP's architecture, outlining its key advantages and opportunities for integration and illuminating the design challenges it presents. Next, he guides you through addressing each of these challenges, covering all CVP components and tools and offering detailed insights available in no other book. Using this book's detailed working configurations and examples, you can minimize configuration errors, reduce downtime, strengthen monitoring, and drive maximum value from any CVP-based unified call center solution. Rue Green, CCIE No. 9269 (Routing & Switching and Voice), CISSP, MCSE, MCITP is a Technical Leader for the Customer Collaboration Service Line within Cisco Advanced Services, where he focuses on unified contact center architectures and deployment methodologies. He currently acts in a delivery architect role for Unified CVP, Unified

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ICM, and Cisco Unified Communications Manager for Unified Contact Center Solutions. He has spent the last 21 years working within different roles related to the architecture, design, and implementation of large voice and data networks, including several years working with complex contact center solutions.

- Discover CVP's powerful capabilities and advantages
- Understand how CVP's components fit together into a unified architecture
- Utilize CVP native components: Call Server, VXML Server, Reporting Server, Operations Console Server, and Cisco Unified Call Studio
- Integrate non-native components such as IOS devices, Unified ICM, UCM, content load balancers, and third-party servers
- Choose the right deployment model for your organization
- Implement detailed call flows for Standalone, Call Director, Comprehensive, and VRU-only deployment models
- Design Unified CVP for high availability
- Efficiently deliver media via streaming, caching, and other techniques
- Address crucial sizing, QoS, network latency, and security considerations
- Successfully upgrade from older versions or H.323 platforms
- Isolate and troubleshoot faults in native and non-native CVP components
- Design virtualized Unified CVP deployments using UCS

This IP communications book is part of the Cisco Press® Networking Technology Series. IP communications titles from Cisco Press help networking professionals understand voice and IP telephony technologies, plan and design converged networks, and implement network solutions for increased productivity.

A practical guide that simplifies your data center architecture, reduces costs, and

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improves speed and agility

**About This Book\*** Learn how to reduce equipment and operating costs, consolidate resources, and automate data center processes\* Eliminate manual, time-consuming tasks that were traditionally required to connect servers in data centers\* A practical hands-on guide that will help you to deploy servers and application stacks with ease

**Who This Book Is For** This book is for system, network, and storage administrators who are responsible for Cisco UCS deployments. You need to have basic knowledge of server architecture, network, and storage technologies.

**What you will learn\*** Set up your Lab using Cisco UCS Emulator\* Configure Cisco UCS, LAN, and SAN connectivity\* Create and manage Service profiles\* Perform various tasks using UCS\* Back up and restore Cisco UCS configuration\* Test various Cisco UCS scenarios

**In Detail** Cisco Unified Computer System (UCS) is a powerful solution for modern data centers and is responsible for increasing efficiency and reducing costs. This hands-on guide will take you through deployment in Cisco UCS. Using real-world examples of configuring and deploying Cisco UCS components, we'll prepare you for the practical deployments of Cisco UCS data center solutions. If you want to develop and enhance your hands-on skills with Cisco UCS solutions, this book is certainly for you. We start by showing you the Cisco UCS equipment options, then introduce Cisco UCS Emulator so you can learn and practice deploying Cisco UCS components. We'll also introduce you to all the areas of UCS solutions through practical configuration examples. Moving on, you'll explore the Cisco UCS Manager, which is the

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centralized management interface for Cisco UCS. Once you get to know UCS Manager, you'll dive deeper into configuring LAN, SAN, identity pools, resource pools, and service profiles for the servers. You'll also get hands-on with administration topics including backup, restore, user's roles, and high availability cluster configuration. Finally, you will learn about virtualized networking, third-party integration tools, and testing failure scenarios. By the end of this book, you'll know everything you need to know to rapidly grow Cisco UCS deployments in the real world.

Hardware and Software Support for Virtualization

Managing and Optimizing VMware VSphere Deployments

Data Analytics for IT Networks

Administrator's Guide to VMware Vsan

Containers in Cisco IOS-XE, IOS-XR, and NX-OS

ACI Advanced Monitoring and Troubleshooting

**This book focuses on the core question of the necessary architectural support provided by hardware to efficiently run virtual machines, and of the corresponding design of the hypervisors that run them. Virtualization is still possible when the instruction set architecture lacks such support, but the hypervisor remains more complex and must rely on additional techniques. Despite the focus on architectural support in current architectures, some historical perspective is necessary to appropriately**

**frame the problem. The first half of the book provides the historical perspective of the theoretical framework developed four decades ago by Popek and Goldberg. It also describes earlier systems that enabled virtualization despite the lack of architectural support in hardware. As is often the case, theory defines a necessary—but not sufficient—set of features, and modern architectures are the result of the combination of the theoretical framework with insights derived from practical systems. The second half of the book describes state-of-the-art support for virtualization in both x86-64 and ARM processors. This book includes an in-depth description of the CPU, memory, and I/O virtualization of these two processor architectures, as well as case studies on the Linux/KVM, VMware, and Xen hypervisors. It concludes with a performance comparison of virtualization on current-generation x86- and ARM-based systems across multiple hypervisors.**

**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.**

**This book contains a detailed description of Cisco UCS (Unified Computing System) a Data Center Server designed for virtualized applications, with large memory footprint and Unified I/O.**

**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](http://gustavoasantana.net). Learn how virtualization can transform and improve traditional data center network topologies Understand the key characteristics and value of each data center virtualization technology Walk through key decisions, and transform choices into architecture Smoothly migrate existing data centers toward greater virtualization Burst silos that have traditionally made data centers**

inefficient Master foundational technologies such as VLANs, VRF, and virtual contexts Use virtual PortChannel and FabricPath to overcome the limits of STP Optimize cabling and network management with fabric extender (FEX) virtualized chassis Extend Layer 2 domains to distant data center sites using MPLS and Overlay Transport Virtualization (OTV) Use VSANs to overcome Fibre Channel fabric challenges Improve SAN data protection, environment isolation, and scalability Consolidate I/O through Data Center Bridging and FCoE Use virtualization to radically simplify server environments Create server profiles that streamline "bare metal" server provisioning "Transcend the rack" through virtualized networking based on Nexus 1000V and VM-FEX Leverage opportunities to deploy virtual network services more efficiently Evolve data center virtualization toward full-fledged private clouds -Reviews - "The variety of material that Gustavo covers in this work would appeal to anyone responsible for Data Centers today. His grasp of virtualization technologies and ability to relate it in both technical and non-technical terms makes for compelling reading. This is not your ordinary tech manual. Through use of relatable visual cues, Gustavo provides information that is easily recalled on the subject of virtualization, reaching across Subject Matter Expertise domains. Whether

**you consider yourself well-versed or a novice on the topic, working in large or small environments, this work will provide a clear understanding of the diverse subject of virtualization." -- Bill Dufresne, CCIE 4375, Distinguished Systems Engineer, Cisco (Americas) "**..this book is an essential reference and will be valuable asset for potential candidates pursuing their Cisco Data Center certifications. I am confident that in reading this book, individuals will inevitably gain extensive knowledge and hands-on experience during their certification preparations. If you're looking for a truly comprehensive guide to virtualization, this is the one!" -- Yusuf Bhajji, Senior Manager, Expert Certifications (CCIE, CCDE, CCAr), Learning@Cisco "When one first looks at those classic Cisco Data Center blueprints, it is very common to become distracted with the overwhelming number of pieces and linkages. By creating a solid theoretical foundation and providing rich sets of companion examples to illustrate each concept, Gustavo's book brings hope back to IT Professionals from different areas of expertise. Apparently complex topics are demystified and the insertion of products, mechanisms, protocols and technologies in the overall Data Center Architecture is clearly explained, thus enabling you to achieve robust designs and successful deployments. A must read... Definitely!" --

**Alexandre M. S. P. Moraes, Consulting Systems Engineer -- Author of "Cisco Firewalls"**

**Cisco Unified Customer Voice Portal**

**Cloud Computing**

**Cisco UCS Cookbook**

**Programming and Automating Cisco Networks**

**Implementing Cisco Hyperflex Solutions**

**Data Center Virtualization Fundamentals**

The real-world guide to securing Cisco-based IP telephony applications, devices, and networks Cisco IP telephony leverages converged networks to dramatically reduce TCO and improve ROI. However, its critical importance to business communications and deep integration with enterprise IP networks make it susceptible to attacks that legacy telecom systems did not face. Now, there ' s a comprehensive guide to securing the IP telephony components that ride atop data network infrastructures – and thereby providing IP telephony services that are safer, more resilient, more stable, and more scalable. Securing Cisco IP Telephony Networks provides comprehensive, up-to-date details for securing Cisco IP telephony equipment, underlying infrastructure, and

telephony applications. Drawing on ten years of experience, senior network consultant Akhil Behl offers a complete security framework for use in any Cisco IP telephony environment. You ' ll find best practices and detailed configuration examples for securing Cisco Unified Communications Manager (CUCM), Cisco Unity/Unity Connection, Cisco Unified Presence, Cisco Voice Gateways, Cisco IP Telephony Endpoints, and many other Cisco IP Telephony applications. The book showcases easy-to-follow Cisco IP Telephony applications and network security-centric examples in every chapter. This guide is invaluable to every technical professional and IT decision-maker concerned with securing Cisco IP telephony networks, including network engineers, administrators, architects, managers, security analysts, IT directors, and consultants. Recognize vulnerabilities caused by IP network integration, as well as VoIP ' s unique security requirements Discover how hackers target IP telephony networks and proactively protect against each facet of their attacks Implement a flexible, proven methodology for end-to-end Cisco IP Telephony security Use a layered (defense-in-depth) approach that builds on underlying network security design Secure CUCM, Cisco Unity/Unity Connection, CUPS, CUCM Express, and Cisco Unity Express

platforms against internal and external threats Establish physical security, Layer 2 and Layer 3 security, and Cisco ASA-based perimeter security Complete coverage of Cisco IP Telephony encryption and authentication fundamentals Configure Cisco IOS Voice Gateways to help prevent toll fraud and deter attacks Secure Cisco Voice Gatekeepers and Cisco Unified Border Element (CUBE) against rogue endpoints and other attack vectors Secure Cisco IP telephony endpoints – Cisco Unified IP Phones (wired, wireless, and soft phone) from malicious insiders and external threats This IP communications book is part of the Cisco Press® Networking Technology Series. IP communications titles from Cisco Press help networking professionals understand voice and IP telephony technologies, plan and design converged networks, and implement network solutions for increased productivity.

The IBM HyperSwap® high availability (HA) function allows business continuity in a hardware failure, power failure, connectivity failure, or disasters, such as fire or flooding. It is available on the IBM SAN Volume Controller and IBM FlashSystem products. This IBM Redbooks publication covers the preferred practices for implementing Cisco VersaStack with IBM HyperSwap. The following are some of the topics

covered in this book: Cisco Application Centric Infrastructure to showcase Cisco's ACI with Nexus 9Ks Cisco Fabric Interconnects and Unified Computing System (UCS) management capabilities Cisco Multilayer Director Switch (MDS) to showcase fabric channel connectivity Overall IBM HyperSwap solution architecture Differences between HyperSwap and Metro Mirroring, Volume Mirroring, and Stretch Cluster Multisite IBM SAN Volume Controller (SVC) deployment to showcase HyperSwap configuration and capabilities This book is intended for pre-sales and post-sales technical support professionals and storage administrators who are tasked with deploying a VersaStack solution with IBM HyperSwap.

"Learn the basics of the Cisco Unified Computing System from an operational viewpoint to provide LAN, SAN, management, and compute resources for your converged Data Centers and prepare for CCNP Data Center certification exams. This LiveLesson takes you from an introduction to the hardware components to a sophisticated understanding of UCS Manager. Cisco UCS are servers optimized for virtualization, giving companies the capability to provide high availability, support for Fibre Channel or iSCSI and fast provisioning. Experienced

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instructor, Desiree Lindfield, guides you through a step by step, configuration of Resource Pools, Service Profiles, and how to set up common administrative tasks such as Backups. Each video lesson addresses core concepts, lab demonstrations, and helpful tips for supporting Cisco UCS. The instruction throughout offers detailed explanations, tips, and configuration verifications. The LiveLesson also provides information to help prepare for the CCNP Data Center certification track."--Resource description page.

Discover how to simplify your data center architecture, reduces costs, and improve speed and agility with Cisco UCS at your side About This Book Learn how to reduce equipment and operating costs, consolidate resources, and automate data center processes Eliminate manual, time-consuming tasks that were traditionally required to connect servers in data centers A practical hands-on guide that will help you to deploy servers and application stacks with ease Who This Book Is For This book is for system, network, and storage administrators who are responsible for Cisco UCS deployments. You need to have basic knowledge of server architecture, network, and storage technologies. What You Will Learn Set up your Lab using Cisco UCS Emulator

Configure Cisco UCS, LAN, and SAN connectivity Create and manage Service profiles Perform various tasks using UCS Backup and restore Cisco UCS configuration Test various Cisco UCS scenarios Manage and automate multiple domains In Detail Cisco Unified Computer System (UCS) is a powerful solution for modern data centers and is responsible for increasing efficiency and reducing costs. This hands-on guide will take you through deployment in Cisco UCS. Using real-world examples of configuring and deploying Cisco UCS components, we'll prepare you for the practical deployments of Cisco UCS data center solutions. If you want to develop and enhance your hands-on skills with Cisco UCS solutions, this book is certainly for you. We start by showing you the Cisco UCS equipment options then introduce Cisco UCS Emulator so you can learn and practice deploying Cisco UCS components. We'll also introduce you to all the areas of UCS solutions through practical configuration examples. Moving on, you'll explore the Cisco UCS Manager, which is the centralized management interface for Cisco UCS. Once you get to know UCS Manager, you'll dive deeper into configuring LAN, SAN, identity pools, resource pools, and service profiles for the servers. You'll also get hands-on with administration topics including

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backup, restore, user's roles, and high availability cluster configuration. Finally, you will learn about virtualized networking, third-party integration tools, and testing failure scenarios. By the end of this book, you'll know everything you need to know to rapidly grow Cisco UCS deployments in the real world. Style and approach This hands-on book takes a tutorial-based approach to help you understand the practical methodologies and deployment of Cisco UCS components.

Cisco Unified Contact Center Enterprise (UCCE)

Implementing VersaStack with Cisco ACI Multi-Pod and IBM HyperSwap for High Availability

Cisco DCUCI Quick Reference

A guide to network programmability and automation in the data center, campus, and WAN

Project California: a Data Center Virtualization Server - UCS (Unified Computing System)

Next-Generation Data Center Architectures

*VersaStack, an IBM and Cisco integrated infrastructure solution, combines computing, networking, and storage into a single integrated system. It combines the Cisco Unified Computing System™ (Cisco*

*UCS®) Integrated Infrastructure with IBM Spectrum Virtualize™, which includes IBM FlashSystem® V9000 and IBM Storwize® storage offerings, for quick deployment and rapid time to value for the implementation of modern infrastructures. With comprehensive reference architectures that include Cisco Validated Designs (CVDs), IBM Redbooks® publications, sizing guidelines, and single-call support, the solution sets a benchmark to accelerate data center infrastructure deployment and to help manage information and resources efficiently amid business change. This IBM Redbooks Solution Guide provides an overview of the VersaStack solution that uses IBM FlashSystem V9000 as an all-flash storage layer. This VersaStack solution delivers extraordinary levels of storage virtualization performance and efficiency in a networking infrastructure, and compute capabilities that are based on the Cisco UCS. This guide explains how the IBM FlashSystem V9000 all-flash storage arrays add performance by using IBM MicroLatency®, macro efficiency, superior reliability, and software-defined storage enterprise features to the cloud computing-ready VersaStack solution. This guide is intended for individuals who want to learn more about the VersaStack integrated solution.*

*Trust the best-selling Official Cert Guide series from Cisco Press to help you learn, prepare, and practice for exam success. They are built with the objective of providing assessment, review, and practice to help ensure you are fully prepared for your certification exam. CCNP Data Center Application Centric Infrastructure DCACI 300-620 Official Cert Guide presents you with an organized test-preparation routine using proven series elements and techniques. "Do I Know This Already?" quizzes open each chapter and enable you to decide how much time you need to spend on each section. Exam topic lists make referencing easy. Chapter-ending Exam Preparation Tasks help you drill on key concepts you must know thoroughly. \* Master CCNP Data Center Application Centric Infrastructure DCACI 300-620 exam topics \* Assess your knowledge with chapter-opening quizzes \* Review key concepts with exam preparation tasks \* Practice with realistic exam questions in the practice test software CCNP Data Center Application Centric Infrastructure DCACI 300-620 Official Cert Guide from Cisco Press enables you to succeed on the exam the first time and is the only self-study resource approved by Cisco. Leading Cisco data center technology expert Ammar Ahmadi shares preparation hints and test-*

*taking tips, helping you identify areas of weakness and improve both your conceptual knowledge and hands-on skills. This complete study package includes \* A test-preparation routine proven to help you pass the exams \* Do I Know This Already? quizzes, which enable you to decide how much time you need to spend on each section \* Chapter-ending exercises, which help you drill on key concepts you must know thoroughly \* The powerful Pearson Test Prep Practice Test software, with two full exams comprised of well-reviewed, exam-realistic questions, customization options, and detailed performance reports \* A final preparation chapter, which guides you through tools and resources to help you craft your review and test-taking strategies \* Study plan suggestions and templates to help you organize and optimize your study time \* Video mentoring from the author's Complete Video Course Well regarded for its level of detail, study plans, assessment features, and challenging review questions and exercises, this official study guide helps you master the concepts and techniques that ensure your exam success. This official study guide helps you master all the topics on the CCNP Data Center Application Centric Infrastructure DCACI 300-620 exam. It tests your knowledge of*

*Cisco switches in ACI mode, including - ACI fabric infrastructure - ACI packet forwarding - External network connectivity - Integrations - ACI management - ACI Anywhere Companion Website: The companion website contains two full practice exams, an interactive Flash Cards application, video mentoring from the author's Complete Video Course, and much more. Includes Exclusive Offers for Up to 80% Off Video Training, Practice Tests, and more Pearson Test Prep online system requirements: Browsers: Chrome version 40 and above; Firefox version 35 and above; Safari version 7; Internet Explorer 10, 11; Microsoft Edge; Opera. Devices: Desktop and laptop computers, tablets running on Android and iOS, smartphones with a minimum screen size of 4.7". Internet access required. Pearson Test Prep offline system requirements: Windows 10, Windows 8.1, Windows 7; Microsoft .NET Framework 4.5 Client; Pentium-class 1 GHz processor (or equivalent); 512 MB RAM; 650 MB disk space plus 50 MB for each downloaded practice exam; access to the Internet to register and download exam databases Also available from Cisco Press for CCNP Data Center DCACI study is the CCNP Data Center Application Centric Infrastructure DCACI 300-620 Official Cert Guide Premium Edition eBook and Practice Test.*

*This digital-only certification preparation product combines an eBook with enhanced Pearson Test Prep Practice Test. This integrated learning package: \* Allows you to focus on individual topic areas or take complete, timed exams \* Includes direct links from each question to detailed tutorials to help you understand the concepts behind the questions \* Provides unique sets of exam-realistic practice questions \* Tracks your performance and provides feedback on a module-by-module basis, laying out a complete assessment of your knowledge to help you focus your study where it is needed most*

*A tutorial-based approach which will help you understand the practical methodologies and deploying of Cisco UCS components. If you are a professional such as a system, network, or storage administrator who is responsible for Cisco UCS deployments, this is the perfect book for you. You should have some basic knowledge of the server's architecture, network, and storage technologies. Familiarity with virtualization technologies is also recommended (though not necessary) as the majority of real-world UCS deployments run virtualized loads. Knowledge of Nexus OS is not necessary as the majority of the management tasks are handled in a graphical user*

interface with very few exceptions using the CLI.

*CCNA Data Center DCICT 200-155 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. A team of leading Cisco data center experts 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, official 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 and 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*

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## Architecture Networking Technology

*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 200-155 exam, including Cisco data center concepts: Portchannel, virtual port-channel (vPC), FabricPath, data plane, control plane, management plane, role based access control, and more Data center unified fabric: FCoE, multihop, VIFs, FEX, and setup Data center virtualization: servers, devices, and Nexus 1000v, including setup and operations Cisco Unified Computing: concepts, discovery, connectivity, setup, and UCSM Cisco Application Centric Infrastructure, ACI logical model, and policy framework n Cloud Computing, services models, and the use of application programming interfaces (APIs) Cisco UCS Director and troubleshooting UCSD workflows*

*Implementing CISCO UCS Solutions - Second Edition*

*A Unified Architecture for Network, Security, and Storage Services*

*IBM FlashSystem V9000 in a VersaStack Environment*

*Automating the Virtualized Data Center*

*Orchestration and Operation*

*Testing Throughout the Network Lifecycle to Maximize Availability and*

## *Performance*

Use data analytics to drive innovation and value throughout your network infrastructure. Network and IT professionals capture immense amounts of data from their networks. Buried in this data are multiple opportunities to solve and avoid problems, strengthen security, and improve network performance. To achieve these goals, IT networking experts need a solid understanding of data science, and data scientists need a firm grasp of modern networking concepts. Data Analytics for IT Networks fills these knowledge gaps, allowing both groups to drive unprecedented value from telemetry, event analytics, network infrastructure metadata, and other network data sources. Drawing on his pioneering experience applying data science to large-scale Cisco networks, John Garrett introduces the specific data science methodologies and algorithms network and IT professionals need, and helps data scientists understand contemporary network technologies, applications, and data sources. After establishing this shared understanding, Garrett shows how to uncover innovative use cases that integrate data science algorithms with network data. He concludes with several hands-on, Python-based case studies reflecting Cisco Customer Experience (CX) engineers' supporting its largest customers. These are designed to serve as templates for developing custom solutions ranging from

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advanced troubleshooting to service assurance. Understand the data analytics landscape and its opportunities in Networking See how elements of an analytics solution come together in the practical use cases Explore and access network data sources, and choose the right data for your problem Innovate more successfully by understanding mental models and cognitive biases Walk through common analytics use cases from many industries, and adapt them to your environment Uncover new data science use cases for optimizing large networks Master proven algorithms, models, and methodologies for solving network problems Adapt use cases built with traditional statistical methods Use data science to improve network infrastructure analysis Analyze control and data planes with greater sophistication Fully leverage your existing Cisco tools to collect, analyze, and visualize data

"This course discusses the WAN technologies and network services required by converged applications in a complex network. The course allows you to understand the selection criteria of network devices and WAN technologies to meet network requirements. You will learn how to configure and troubleshoot network devices and resolve common issues with data link protocols. You will also develop the knowledge and skills needed to implement IPsec and virtual private network (VPN) operations in a complex network."--Back cover.

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Cisco HyperFlex solutions enhance data center efficiency, agility, and resiliency by tightly integrating core infrastructure (compute, storage, networking, and system management), increasing automation, and simplifying lifecycle management. This authoritative, comprehensive guide brings together knowledge, detailed configuration options, and real-world case studies for successfully deploying Cisco HyperFlex technologies in environments of all types. Three expert authors present easy-to-understand overviews of key Hyperconverged Infrastructure (HCI) concepts, show how HyperFlex technologies apply them, and present detailed reference examples with topologies, configurations, and verifications for each major feature. Drawing on extensive experience helping Cisco customers adopt HyperFlex, they present best practices for optimizing design, streamlining deployment, avoiding pitfalls, and maximizing value. This guide will be indispensable to every IT and network professional, manager, or consultant involved in planning, deploying, or operating Cisco HyperFlex or evaluating any HCI solution. Reflecting current trends in HCI deployment, it will be valuable in both small-scale environments and large-scale data centers. Explore how and why data centers have evolved from traditional converged and hyperconverged infrastructure Review the essentials of HyperFlex hyperconverged infrastructure connectivity Understand HyperFlex

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Data Platform architecture, components, topologies, and supported hardware Compare HyperFlex standard, stretch, and edge clusters, and understand their respective roles Install and deploy each type of Cisco HyperFlex cluster, including preparation, prerequisites, and components Manage HyperFlex via HyperFlex Connect: HX storage cluster status, components, encryption, replication, and more Maintain HyperFlex: clustering, virtual machine management, native snapshots, ReadyClones, and more Scale HyperFlex clusters, replace hardware, and upgrade software Configure and manage advanced HyperFlex Data Platform disaster recovery features Integrate supported third-party data protection solutions, including Veeam Availability Suite, Cohesity, and Commvault Utilize the cloud-based Cisco Intersight platform to deploy HyperFlexAnywhere, including edge and standard clusters Cisco Unified Computing System (UCS) (Data Center)A Complete Reference Guide to the Cisco Data Center Virtualization Server Architecture Pearson Education

CCNP and CCIE Data Center Core DCCOR 350-601 Official Cert Guide  
NX-OS and Cisco Nexus Switching  
Securing Cisco IP Telephony Networks  
Building Unified Contact Centers

## Connecting Networks Companion Guide

### Implementing Cisco UCS Solutions

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

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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.

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

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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. 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

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problems, and more

The definitive guide to UCS and the Cisco® Data Center Server: planning, architecture, components, deployment, and benefits With its new Unified Computing System (UCS) family of products, Cisco has introduced a fundamentally new vision for data center computing: one that reduces ownership cost, improves agility, and radically simplifies management. In this book, three Cisco insiders thoroughly explain UCS, and offer practical insights for IT professionals and decision-makers who are evaluating or implementing it. The authors establish the context for UCS by discussing the implications of virtualization, unified I/O, large memories and other key technologies, and showing how trends like cloud computing and green IT will drive the next-generation data center. Next, they take a closer look at the evolution of server CPU, memory, and I/O subsystems, covering advances such as the Intel® XEON® 5500, 5600, 7500, DDR3 memory, and unified I/O over 10 Gbps Ethernet. Building on these fundamentals, the authors then discuss UCS in detail, showing how it systematically overcomes key limitations of current data center environments. They review UCS features, components, and architecture, and demonstrate how it can improve data center performance, reliability, simplicity, flexibility, and energy efficiency. Along the way, they offer realistic planning, installation, and migration guidance: everything decision-makers and technical implementers need to gain maximum value from UCS—now, and for years to come. Silvano Gai has spent 11

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years as Cisco Fellow, architecting Catalyst®, MDS, and Nexus switches. He has written several books on networking, written multiple Internet Drafts and RFCs, and is responsible for 80 patents and applications. He teaches a course on this book's topics at Stanford University. Tommi Salli, Cisco Technical Marketing Engineer, has nearly 20 years of experience with servers and applications at Cisco, Sun, VERITAS, and Nuova Systems. Roger Andersson, Cisco Manager, Technical Marketing, spent more than 12 years in the CLARiiON® Engineering Division at EMC, and 5 years as Technical Product Manager at VERITAS/Symantec. He is now focused on Cisco UCS system management. Streamline data centers with UCS to systematically reduce cost of ownership Eliminate unnecessary server components—and their setup, management, power, cooling, and cabling Use UCS to scale service delivery, simplify service movement, and improve agility Review the latest advances in processor, memory, I/O, and virtualization architectures for data center servers Understand the specific technical advantages of UCS Integrate UCS 6100 Fabric Interconnect, Cisco UCS 2100 Series Fabric Extenders, UCS 5100 Series Blade Server Enclosures, UCS B-Series Blade Servers, UCS C-Series Rack Servers, and UCS Adapters Use Cisco UCS Manager to manage all Cisco UCS components as a single, seamless entity Integrate third-party management tools from companies like BMC®, CA®, EMC®, IBM®, Microsoft®, and VMware® Practice all this with a copy of Cisco Unified Computing System™ Platform Emulator Lite (UCSPE Lite) on the DVD in the back of the book

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Demystifying HCI

Mastering Microsoft Virtualization

Enterprise Network Testing

Building a Future-Proof Cloud Infrastructure

A Complete Reference Guide to the Data Center Virtualization Server Architecture

CCNP Data Center Application Centric Infrastructure 300-620 DCACI Official Cert Guide

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

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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

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

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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

Over 40 practical recipes to get your hands dirty with the powerful Cisco UCS and overcome various challenges About This Book Master the skills of minimizing cost, enabling your business to work faster by reducing cycle times for reporting and improving overall revenue Work through hands-on recipes for efficient deployment approaches, see computing techniques, and explore new operational models with UCS Render a better work-flow management, ensure effective monitoring, and learn new deployment paradigms for the operational infrastructure with the help of this book Who This Book Is For This book is for competent system/network or storage administrators who are working with Cisco UCS, but now want to learn new ways to compute UCS. What You Will Learn Familiarize yourself with information on the latest information on memory management practices, virtualization architectures, and the specific technical advantages of UCS Get a concrete understanding of integrating processes and techniques to ensure effective convergence of LAN/SAN Get to

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know the best practices of Cisco UCS, EMC Storage, and VMware vSphere Master migrating data from other band servers or Blade to Cisco UCS Comprehend how to replicate and back up UCS to remote sites UCS Assimilate innovative techniques to deploy UCS to leverage its full potential Gather information on installing and configuring automatic and manual Pinning Discover ways to integrate a system in Cisco UCS In Detail Cisco Unified Computing System (UCS) is a data center server platform that is used for computing, deploying, and storing resources in data center environments. This cookbook aims to teach you about various tasks you can implement to improve your existing method of configuring and deploying UCS. You will start by learning how to upgrade your firmware on Brocade and Cisco Fibre Channel Switch and will move on to enhance your knowledge of LAN connectivity. We will then discuss how to configure Windows 2008 and 2012 local boot in Cisco UCS. Next, you will learn how to install the operating system on Cisco UCS and use Cisco UCS Power Calculator to calculate the UCS consumption. Finally, we'll take a look at backup solutions. By the end of the book, you will know several ways to build and compute in data center environment using Cisco UCS. Style and approach This guide explains every task in a conversational and easy-to-follow style. You can open this book up to the task you want to learn and will be able to perform that task by the end of the recipe.

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

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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 services 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.

Cisco Unified Computing System (UCS)

Cisco Unified Computing System (UCS) (Data Center)

Exam 210-451 and Exam 210-455

Implementing and Operating Cisco Data Center Core Technologies

CCNA Cloud Complete Study Guide

*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.*

*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.*

*Enterprise Network Testing Testing Throughout the Network Lifecycle to Maximize Availability and Performance Andy Sholomon, CCIE® No. 15179 Tom Kunath, CCIE No. 1679 The complete guide to using testing to reduce risk and downtime in advanced enterprise networks Testing has become crucial to meeting enterprise expectations of near-zero network downtime. Enterprise Network Testing is the first comprehensive guide to all facets of enterprise network testing. Cisco enterprise consultants Andy Sholomon and Tom Kunath offer a complete blueprint and best-practice methodologies for testing any new network system, product, solution, or advanced technology. Sholomon and Kunath begin by explaining why it is important to test and how network professionals can leverage structured system testing to meet specific business goals. Then, drawing on their extensive experience with enterprise clients, they present several detailed case studies. Through real-world examples, you learn how to test architectural “proofs of concept,” specific network features, network readiness for use, migration*

*processes, security, and more. Enterprise Network Testing contains easy-to-adapt reference test plans for branches, WANs/MANs, data centers, and campuses. The authors also offer specific guidance on testing many key network technologies, including MPLS/VPN, QoS, VoIP, video, IPsec VPNs, advanced routing (OSPF, EIGRP, BGP), and Data Center Fabrics. § Understand why, when, and how you should test your network § Use testing to discover critical network design flaws § Incorporate structured systems testing into enterprise architecture strategy § Utilize testing to improve decision-making throughout the network lifecycle § Develop an effective testing organization and lab facility § Choose and use test services providers § Scope, plan, and manage network test assignments § nLeverage the best commercial, free, and IOS test tools § Successfully execute test plans, including crucial low-level details § Minimize the equipment required to test large-scale networks § Identify gaps in network readiness § Validate and refine device configurations § Certify new hardware, operating systems, and software features § Test data center performance and scalability § Leverage test labs for hands-on technology training 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. Cisco Unified Contact Center Enterprise (UCCE) The complete guide to managing UCCE environments: tips, tricks, best practices, and lessons learned Cisco Unified Contact Center Enterprise (UCCE) integrates multiple components and can serve a wide spectrum of business requirements. In this book, Gary Ford, an experienced Cisco UCCE consultant brings together all the guidance you need to optimally configure and manage UCCE in any environment. The author shares in-depth insights covering both the enterprise and hosted versions of UCCE. He presents an administrator's view of how to perform key UCCE tasks and why they work as they do. He thoroughly addresses application configuration, agents, scripting, IVR, dial plans, UCM, error handling, reporting, metrics, and many other key topics. You'll find proven, standardized configuration examples that help eliminate errors and reduce downtime, step-by-step walkthroughs of several actual configurations, and thorough coverage of monitoring and troubleshooting UCCE systems. Cisco Unified*

*Contact Center Enterprise (UCCE) is an indispensable resource to help you deploy and operate UCCE systems reliably and efficiently. · Understand the Cisco Unified Contact Center product portfolio and platform architecture · Choose the right single-site, multi-site, or clustered deployment model for your environment · Take a lifecycle services approach to UCCE deployment and application configuration--including preparation, planning, design, and implementation · Implement traditional, current-generation, and next-generation call routing · Master the latest best practices for call flow scripting · Understand UCCE's nodes and distributed processes and build a clean system startup sequence · Design, implement, and deliver unified CM/IP IVR solutions · Set up and efficiently manage UCCE databases · Make the most of UCCE's reporting tools · Create advanced applications with Data-Driven Routing · Effectively maintain any UCCE deployment, including older versions · Use a best-practice methodology for troubleshooting, and master valuable, little-known Cisco diagnostic tools This IP communications book is part of the Cisco Press® Networking Technology Series. IP communications titles from Cisco Press help networking professionals understand voice and*

*IP telephony technologies, plan and design converged networks, and implement network solutions for increased productivity.*

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*Introduction to Storage Area Networks*

*CCDA 640-864 Official Cert Guide*

*Cisco Certified Internetwork Expert Collaboration Quick Reference*

*Hyperconverged Infrastructure Data Centers*

*A Complete Reference Guide to the Cisco Data Center Virtualization Server Architecture*

**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. 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. Trust the best selling Official Cert Guide series from Cisco Press to help you learn, prepare, and practice for exam success. They are built with the objective of providing assessment, review, and practice to help ensure you are fully prepared for your certification exam. CCDA 640-864 Official Cert Guide presents you with an organized test preparation routine through the use of proven series elements and techniques. “Do I Know This Already?” quizzes open each chapter and enable you to decide how much time you need to spend on each section. Exam topic lists make referencing easy. Chapter-ending Exam Preparation Tasks help you drill on key concepts you must know thoroughly. Master Cisco CCDA 640-864 exam topics Assess your knowledge with chapter-opening quizzes Review key concepts with exam preparation tasks CCDA 640-864 Official Cert Guide, focuses specifically on the objectives for the Cisco CCDA DESGN exam. Expert networking consultants Anthony Bruno and Steve Jordan 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 CCDA DESGN exam, including: Network design methodology Network structure models Enterprise LAN and data center design Enterprise network virtualization Wireless LAN design WAN technologies and design IPv4 and IPv6 RIP, EIGRP, OSPF, and BGP Route summarization and route filtering Security solutions Voice and video design Network management protocols CCDA 640-864 Official Cert Guide is part of a recommended learning path from Cisco that includes simulation and hands-on training from authorized Cisco Learning Partners and self-study products from Cisco Press. To find out more about instructor-led training, e-learning, and hands-on instruction offered by authorized Cisco Learning Partners worldwide, please visit [www.cisco.com/go/authorizedtraining](http://www.cisco.com/go/authorizedtraining).**

**CCNA Data Center DCICN 200-150 Official Cert Guide**