

VMware Vsphere Optimize And Scale

From the author of the vSphere Clustering Deep Dive series - The VMware vSphere 6.5 Host Resources Deep Dive is a guide to building consistent high-performing ESXi hosts. A book that people can't put down. Written for administrators, architects, consultants, aspiring VCDX-es and people eager to learn more about the elements that control the behavior of CPU, memory, storage and network resources. This book shows that we can fundamentally and materially improve the systems we're building. We can make the currently running ones consistently faster by deeply understanding and optimizing our systems. The reality is that specifics of the infrastructure matter. Details matter. Especially for distributed platforms which abstract resource layers, such as NSX and vSAN. Knowing your systems inside and out is the only way to be sure you've properly handled those details. It's about having a passion for these details. It's about loving the systems we build. It's about understanding them end-to-end. This book explains the concepts and mechanisms behind the physical resource components and the VMkernel resource schedulers, which enables you to: Optimize your workload for current and future Non-Uniform Memory Access (NUMA) systems. Discover how vSphere Balanced Power Management takes advantage of the CPU Turbo Boost functionality, and why High Performance does not. How the 3-DIMMs per Channel configuration results in a 10-20% performance drop. How TLB works and why it is bad to disable large pages in virtualized environments. Why 3D XPoint is perfect for the vSAN caching tier. What queues are and where they live inside the end-to-end storage data paths. Tune VMkernel components to optimize performance for VXLAN network traffic and NFV environments. Why Intel's Data Plane Development Kit significantly boosts packet processing performance.

Server virtualization technologies are becoming more popular to help efficiently utilize resources by consolidating servers. IBM®, the first company that developed and made available the virtual technology in 1966, offers advanced, powerful, reliable, and cost-saving virtualization technologies in various hardware and software products including DB2® for Linux, UNIX, and Windows. This IBM Redbooks® publication describes using IBM DB2 9 with server virtualization. We start with a general overview of virtualization and describe specific server virtualization technologies to highlight how the server virtualization technologies have been implemented. With this introduction anyone new to virtualization will have a better understanding of server virtualization and the industry server virtualization technologies available in the market. Following the virtualization concept, we describe in detail the setup, configuration, and managing of DB2 with three leading server virtualization technologies: IBM Power Systems™ with PowerVM™, VMware Hyper-V We discuss the virtual machine setup with DB2 in mind to help IT support understand the effective ways of setting up a virtual environment specific for DB2. We explain the architecture and components of these three server virtualization technologies to allow DBAs to understand how a database environment using DB2 can benefit from using the server virtualization technologies. In addition, we discuss the DB2 features and functions that can take advantage of using server virtualization. These features are put into practice when describing how to set up DB2 with the three virtualization technologies discussed in this book. This book also includes a list of best practices from the various tests performed while using these virtualization technologies. These best practices can be used as a guideline or a reference when setting up DB2 using these virtualization technologies.

Master vSphere 6 virtualization with hands-on practice and bonus preview exams VCP6-DCV: VMware Certified Professional-Data Center Virtualization on vSphere 6 Study Guide is your ultimate guide to preparing for exam 2V0-621. This Study Guide provides 100% coverage of all exam objectives and offers a unique set of study tools including assessment tests, objective map, real-world scenarios, hands-on exercises, and much more so you can be confident come exam day. You will also receive access to the superior Sybex interactive online learning environment that provides additional study tools including electronic flashcards and bonus practice exams. More than just a study guide, this book bridges the gap between exam prep and real-world on the job skills by focusing on the key information VMware professionals need to do the job. You'll master the vCenter Server and ESXi from planning and installation through upgrade and security, and develop an in-depth understanding of vSphere networking and storage, vApp deployment, service level establishment, troubleshooting, monitoring implementation, and so much more. Study 100% of exam 2V0-621 objectives Practice your skills with hands-on exercises Gain professional insight from real-world scenarios Test your understanding with review questions, practice tests, and more Virtualization is the number-one IT priority for organizations across public and private sectors, and VMware is the dominant force in the virtualization space. The VCP6-DCV certification gives you a highly marketable credential in terms of employment, but first you must pass this challenging exam. VCP6-DCV gives you the power of Sybex exam prep and the skills you need to excel at the job. Deploy and configure vSphere infrastructure and learn to effectively create and administer vSphere virtual machines Key Features Implement advanced network virtualization techniques Configure and administer vSphere high availability Enhance your data center virtualization skills with practice questions and mock tests Book Description This exam guide enables you to install, configure, and manage the vSphere 6.5 infrastructure in all its components: vCenter Server, ESXi hosts, and virtual machines, while helping you to prepare for the industry standard certification. This data center book will assist you in automating administration tasks and enhancing your environment's capabilities. You will begin with an introduction to all aspects related to security, networking, and storage in vSphere 6.5. Next, you will learn about resource management and understand how to back up and restore the vSphere 6.5 infrastructure. As you advance, you will also cover troubleshooting, deployment, availability, and virtual machine management. This is followed by two mock tests that will test your knowledge and challenge your understanding of all the topics included in the exam. By the end of this book, you will not only have learned about virtualization and its techniques, but you'll also be prepared to pass the VCP6.5-DCV (2V0-622) exam. What you will learn Deploy and configure vSphere infrastructure Create

and administer vSphere virtual machines Optimize, secure, and troubleshoot all vSphere components Implement vSphere HA on a vSAN cluster Understand how to back up and restore your vSphere 6.5 infrastructure Test your understanding of key concepts required through sample questions Who this book is for If you are interested in achieving Data Center Virtualization certification, this is the book is for you. You will also benefit from this book if you are a system administrator or network engineer. Some prior knowledge of virtualization can assist you in understanding key concepts covered in the book.

Plan and Implement Hadoop Virtualization for Maximum Performance, Scalability, and Business Agility Enterprises running Hadoop must absorb rapid changes in big data ecosystems, frameworks, products, and workloads. Virtualized approaches can offer important advantages in speed, flexibility, and elasticity. Now, a world-class team of enterprise virtualization and big data experts guide you through the choices, considerations, and tradeoffs surrounding Hadoop virtualization. The authors help you decide whether to virtualize Hadoop, deploy Hadoop in the cloud, or integrate conventional and virtualized approaches in a blended solution. First, Virtualizing Hadoop reviews big data and Hadoop from the standpoint of the virtualization specialist. The authors demystify MapReduce, YARN, and HDFS and guide you through each stage of Hadoop data management. Next, they turn the tables, introducing big data experts to modern virtualization concepts and best practices. Finally, they bring Hadoop and virtualization together, guiding you through the decisions you'll face in planning, deploying, provisioning, and managing virtualized Hadoop. From security to multitenancy to day-to-day management, you'll find reliable answers for choosing your best Hadoop strategy and executing it. Coverage includes the following:

- Reviewing the frameworks, products, distributions, use cases, and roles associated with Hadoop
- Understanding YARN resource management, HDFS storage, and I/O
- Designing data ingestion, movement, and organization for modern enterprise data platforms
- Defining SQL engine strategies to meet strict SLAs
- Considering security, data isolation, and scheduling for multitenant environments
- Deploying Hadoop as a service in the cloud
- Reviewing the essential concepts, capabilities, and terminology of virtualization
- Applying current best practices, guidelines, and key metrics for Hadoop virtualization
- Managing multiple Hadoop frameworks and products as one unified system
- Virtualizing master and worker nodes to maximize availability and performance
- Installing and configuring Linux for a Hadoop environment

IBM® Spectrum Virtualize and VMware's Virtual Volumes (VVols) are paving the way toward a true IBM Software Defined Environment (SDE). IBM Spectrum™ Virtualize is at the core of software-defined storage. The addition of VVols enables a fundamentally more efficient operational model for storage in virtualized environments, centering it around the virtual machine (VM) rather than the physical infrastructure. This IBM Redbooks® publication provides an overview of the VVols management framework and its implementation on storage systems managed by IBM Spectrum Virtualize™.

This book follows a step-by-step tutorial approach with some real-world scenarios that vSphere businesses will be required to overcome every day. This book also discusses creating and configuring virtual machines and also covers monitoring virtual machine performance and resource allocation options. This book is for VMware administrators who want to build their knowledge of virtual machine administration and configuration. It's assumed that you have some experience with virtualization administration and vSphere. Master your virtual environment with the ultimate vSphere guide Mastering VMware vSphere 6 is the fully updated edition of the bestselling guide to VMware's virtualization solution. With comprehensive coverage of this industry-leading toolset, this book acts as an informative guide and valuable reference. Step-by-step instruction walks you through installation, configuration, operation, security processes, and much more as you conquer the management and automation of your virtual environment. Written by certified VMware vExperts, this indispensable guide provides hands-on instruction and detailed conceptual explanations, anchored by practical applications and real-world examples. This book is the ultimate guide to vSphere, helping administrators master their virtual environment. Learn to: Install, configure, and manage the vCenter Server components Leverage the Support Tools to provide maintenance and updates Create and configure virtual networks, storage devices, and virtual machines Implement the latest features to ensure compatibility and flexibility Manage resource allocation and utilization to meet application needs Monitor infrastructure performance and availability Automate and orchestrate routine administrative tasks Mastering VMware vSphere 6 is what you need to stay up-to-date on VMware's industry-leading software for the virtualized datacenter.

Offers techniques, tips, and insights into squeezing maximum performance out of a virtualized database.

Explore the benefits of VMware vSphere 6.7 to provide a powerful, flexible, and secure virtual infrastructure, and secure apps. Next, you'll pick up on how to enhance your infrastructure with high-performance storage access, such as remote direct memory access (RDMA) and Persistent Key Features Design, deploy and manage VMware vSphere virtual data centers Implement monitoring and security of VMware workloads with ease Explore tips and techniques for designing a robust virtual infrastructure Book Description vSphere 6.7 is the latest release of VMware's industry-leading virtual cloud platform. By understanding how to manage, secure, and scale apps with vSphere 6.7, you can easily run even the most demanding of workloads. This Learning Path begins with an overview of the features of the vSphere 6.7 suite. You'll learn how to plan and design a virtual infrastructure. You'll also gain insights into best practices to efficiently configure, manage, and secure apps. Next, you'll pick up on how to enhance your infrastructure with high-performance storage access, such as remote direct memory access (RDMA) and Persistent memory. The book will even guide you in securing your network with security features, such as encrypted vMotion and VM-level encryption. Finally, by learning how to apply Proactive High Availability and Predictive Distributed Resource Scheduler (DRS), you'll be able to achieve enhanced computing, storage, network, and management capabilities for your virtual data center. By the end of this Learning Path, you'll be able to build your own VMware vSphere lab that can run high workloads. This Learning Path includes content from the following Packt products: VMware vSphere 6.7 Data Center

Design Cookbook - Third Edition by Mike Brown and Hersey Cartwright Mastering VMware vSphere 6.7 - Second Edition by Martin Gavanda, Andrea Mauro, Karel Novak, and Paolo Valsecchi What you will learn Understand how to patch, upgrade, and manage a virtual environment with vSphere 6.7 Identify key factors related to a vSphere design Mitigate security risks and meet compliance requirements in a vSphere design Create a vSphere conceptual design by identifying technical and business requirements Map the logical resource design into the physical vSphere design Create professional vSphere design documentation Who this book is for This Learning Path is for administrators, infrastructure engineers, consultants, and architects who want to design virtualized data center environments using VMware vSphere 6.x (or previous versions of vSphere and the supporting components). Basic knowledge of VMware vSphere is required to get the most out of this Learning Path.

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.

Unleash the benefits of VMware vSphere 6.7 to provide a powerful, flexible and secure digital infrastructure Key Features Deep dive into areas like management, security, scalability, availability and more with vSphere 6.7 Design, deploy and manage VMware vSphere virtual datacenters Implement monitoring and security of VMware workloads with ease Book Description vSphere 6.7 is the latest release of VMware's industry-leading, virtual cloud platform. It allows organisations to move to hybrid cloud computing by enabling them to run, manage, connect and secure applications in a common operating environment. This up-to-date, 2nd edition provides complete coverage of vSphere 6.7. Complete with step-by-step explanations of essential concepts, practical examples and self-assessment questions, you will begin with an overview of the products, solutions and features of the vSphere 6.7 suite. You'll learn how to design and plan a virtual infrastructure and look at the workflow and installation of components. You'll gain insight into best practice configuration, management and security. By the end the book you'll be able to build your own VMware vSphere lab that can run even the most demanding of workloads. What you will learn Explore the immense functionality of vSphere 6.7 Design, manage and administer a virtualization environment Get tips for the VCP6-DCV and VCIX6-DCV exams Understand how to implement different migration techniques across different environments Explore vSphere 6.7's powerful capabilities for patching, upgrading and managing the configuration of virtual environments. Understand core vSphere components Master resource management, disaster recovery, troubleshooting, monitoring and security Who this book is for This book is for Administrators, Infrastructure Engineers, Architects, and Consultants with basic knowledge of VMware vSphere.

Kubernetes radically changes the way applications are built and deployed in the cloud. Since its introduction in 2014, this container orchestrator has become one of the largest and most popular open source projects in the world. The updated edition of this practical book shows developers and ops personnel how Kubernetes and container technology can help you achieve new levels of velocity, agility, reliability, and efficiency. Kelsey Hightower, Brendan Burns, and Joe Beda—who've worked on Kubernetes at Google and beyond—explain how this system fits into the lifecycle of a distributed application. You'll learn how to use tools and APIs to automate scalable distributed systems, whether it's for online services, machine learning applications, or a cluster of Raspberry Pi computers. Create a simple cluster to learn how Kubernetes works Dive into the details of deploying an application using Kubernetes Learn specialized objects in Kubernetes, such as DaemonSets, jobs, ConfigMaps, and secrets Explore deployments that tie together the lifecycle of a complete application Get practical examples of how to develop and deploy real-world applications in Kubernetes

Your One-Stop Reference for VMware vSphere Automation If you manage vSphere in a Windows environment, automating routine tasks can save you time and increase efficiency. VMware vSphere PowerCLI is a set of pre-built commands based on Windows PowerShell that is designed to help you automate vSphere processes involving virtual

machines, datacenters, storage, networks, and more. This detailed guide—using a practical, task-based approach and real-world examples—shows you how to get the most out of PowerCLI's handy cmdlets. Learn how to: Automate vCenter Server and ESX/ESX(i) Server deployment and configuration Create and configure virtual machines and use vApps Secure, back up, and restore your virtual machines Monitor, audit, and report the status of your vSphere environment Use the PowerCLI SDK, PowerWF Studio, and vEcoShell Schedule and view automation Add a GUI front end to your scripts

Prepare to succeed at your VCDX panel defense and gain world-class knowledge for designing complex VMware environments VMware Certified Design Expert (VCDX) is the highest level of VMware certification, achieved by dedicated professionals who have demonstrated exceptional skill in VMware enterprise deployments. To earn a VCDX, professionals must create a complete enterprise VMware design and undergo an arduous defense at the hands of some of the world's most sophisticated VMware experts. Now, for the first time, there's a comprehensive guide to VCDX defense: VCDX Boot Camp. Based on the legendary standing-room-only boot camps led by VCDX co-creator John Arrasjid, this guide captures the unsurpassed personal experience of three pioneering VCDX certification holders, program developers, and defense panelists. John Arrasjid, Ben Lin, and Mostafa Khalil cover everything you need to know to prepare for certification. They demystify the entire VCDX defense process, clearly explain its format and prerequisites, and offer indispensable tips for maximizing your likelihood of success. Detailed chapters on both design and troubleshooting offer four complete scenarios explaining exactly what VCDX panelists will expect from your defense. Learn how to think like a VCDX, discovering powerful insights and best practices for designing your own world-class virtualized environment. Coverage includes • Authoritative preparation guidance (including expert insights into scheduling your preparation and defense) • Tips for conducting mock defenses, boot camps, and study sessions with your colleagues • How to select, create, and document a superior, defensible design • How to make design choices and incorporate design patterns that support the VCDX blueprint • How to confidently defend your skills in architecture, designing new solutions, and troubleshooting design or implementation flaws • Proven tips for responding to tough questions from panelists • Detailed example defenses of designs incorporating VCDX-DCV, VCDX-Cloud, and VCDX-DT vmwarepress.com vmware.com/go/vcdx

Design, develop and deploy a highly available vSphere environment for VMware Horizon View About This Book Enhance your capability of meeting various Service Level Agreements in VMware Horizon View Get acquainted through all the necessary considerations for building a View environment Cover VMware High Availability hurdle by hurdle along with the checklists for verification of the environment being ready for production Who This Book Is For If you manage, plan or deploy VMware Horizon View or are looking for tips for best practices and configuration details this book is for you. This book is intended for administrators who design and deploy VMware Horizon View or administrators who are looking for ways to improve their existing View environment. What You Will Learn Install and configure a VMware Horizon View Connection Server and redundant pair Discover the networking requirements for View and learn how to build redundancy into your network Analyze each of the View user pool types and how each one can be made highly available and survivable. Get to know about storage protocols such as NFS, iSCSI and Fibre Channel Deploy Virtual SAN, and find out how to effectively couple Virtual SAN with View Learn about View monitoring tools to allow fast responses to various crises Plan, analyze and upgrade VMware Horizon View Analyze network services required for VMware Horizon View and build them in a redundant manner In Detail The increasing movement to virtualize workloads and workstations has put VMware Horizon View into a central mission critical role in many environments. Administrators may be overwhelmed with planning for outages and dealing with failure scenarios. It's easy to miss small details that will result in outages down the road. Following VMware Horizon View best practices and planning ahead with network infrastructure will allow you to avoid these common pit falls. This book will walk you through the setup and configuration of View in a highly available configuration. It will provide you with the skills to analyze and deploy configurations that can stand up to rigorous failure standards. The book starts with deploying and basic configuration of VMware Horizon View in a redundant setup, then moves on to cover high availability for networking, fibre channel, NFS, and iSCSI. We finish this book with monitoring and upgrade planning. At the end we also learn about maintaining the uptime and minimizing the downtime that can be caused due to various factors. Each topic comes with a list of best practices and failure scenarios to test. Administrators will learn the intricacies of protecting a View environment. Style and approach This book provides configuration and installation steps for administration and installation of a Horizon View server. It includes high-level overviews of any protocols, services used by Horizon View, and best practices and high availability checklists for each chapter.

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

vSphere High Performance Cookbook is written in a practical, helpful style with numerous recipes focusing on answering and providing solutions to common, and not-so

common, performance issues and problems. The book is primarily written for technical professionals with system administration skills and some VMware experience who wish to learn about advanced optimization and the configuration features and functions for vSphere 5.1.

Use self-driven data centers to reduce management complexity by deploying Infrastructure as Code to gain value from investments. Key Features Add smart capabilities in VMware Workspace ONE to deliver customer insights and improve overall security Optimize your HPC and big data infrastructure with the help of machine learning Automate your VMware data center operations with machine learning Book Description This book presents an introductory perspective on how machine learning plays an important role in a VMware environment. It offers a basic understanding of how to leverage machine learning primitives, along with a deeper look into integration with the VMware tools used for automation today. This book begins by highlighting how VMware addresses business issues related to its workforce, customers, and partners with emerging technologies such as machine learning to create new, intelligence-driven, end user experiences. You will learn how to apply machine learning techniques incorporated in VMware solutions for data center operations. You will go through management toolsets with a focus on machine learning techniques. At the end of the book, you will learn how the new vSphere Scale-Out edition can be used to ensure that HPC, big data performance, and other requirements can be met (either through development or by fine-tuning guidelines) with mainstream products. What you will learn Orchestrate on-demand deployments based on defined policies Automate away common problems and make life easier by reducing errors Deliver services to end users rather than to virtual machines Reduce rework in a multi-layered scalable manner in any cloud Explore the centralized life cycle management of hybrid clouds Use common code so you can run it across any cloud Who this book is for This book is intended for those planning, designing, and implementing the virtualization/cloud components of the Software-Defined Data Center foundational infrastructure. It helps users to put intelligence in their automation tasks to get self driving data center. It is assumed that the reader has knowledge of, and some familiarity with, virtualization concepts and related topics, including storage, security, and networking.

A practical guide packed with step-by-step recipes to design a virtual datacenter using VMware 5.x. This book is a guide for anyone interested in designing virtualized datacenters using VMware vSphere 5.x and the supporting components. Current administrators of VMware vSphere environments will find this book useful when interested in becoming a vSphere Architect or are interested in learning more about the virtual datacenter design process. Knowledge of vSphere installation, configuration, and administration is a prerequisite.

Annotation Thousands of organizations are virtualizing large-scale Oracle database systems. But, until now, reliable best practices have been hard to find, and database and virtualization professionals have often brought differing and incompatible perspectives to the challenge. Now, there's a comprehensive best practice guide reflecting deep understanding of both Oracle and vSphere, and supported by extensive in-the-field experience with the full spectrum of applications and environments.

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

Knative in Action teaches you to build complex and efficient serverless applications. Summary Take the pain out of managing serverless applications. Knative, a collection of Kubernetes extensions curated by Google, simplifies building and running serverless systems. Knative in Action guides you through the Knative toolkit, showing you how to launch, modify, and monitor event-based apps built using cloud-hosted functions like AWS Lambda. You'll learn how to use Knative Serving to develop software that is easily deployed and autoscaled, how to use Knative Eventing to wire together disparate systems into a consistent whole, and how to integrate Knative into your shipping pipeline. Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. About the technology With Knative, managing a serverless application's full lifecycle is a snap. Knative builds on Kubernetes orchestration features, making it easy to deploy and run serverless apps. It handles low-level chores—such as starting and stopping instances—so you can concentrate on features and behavior. About the book Knative in Action teaches you to build complex and efficient serverless applications. You'll dive into Knative's unique design principles and grasp cloud native concepts like handling latency-sensitive workloads. You'll deliver updates with Knative Serving and interlink apps, services, and systems with Knative Eventing. To keep you moving forward, every example includes deployment advice and tips for debugging. What's inside Deploy a service with Knative Serving Connect systems with Knative Eventing Autoscale responses for different traffic surges Develop, ship, and operate software About the reader For software developers comfortable with CLI tools and an OO language like Java or Go. About the author Jacques Chester has worked in Pivotal and VMware R&D since 2014, contributing to Knative and other projects. Table of Contents 1 Introduction 2 Introducing Knative Serving 3 Configurations and Revisions 4 Routes 5 Autoscaling 6 Introduction to Eventing 7 Sources and Sinks 8 Filtering and Flowing 9 From Conception to Production

Best practices, guidance, and tips for virtualizing Microsoft® business critical applications on the VMware vSphere® platform By virtualizing Microsoft's enterprise applications on vSphere, you can drive down costs while migrating toward flexible, low-cost private cloud architectures. This unique guidebook bridges the gap between the Microsoft and VMware worlds, bringing together the deep knowledge, cutting-edge best practices, and practical techniques you need to succeed. Leading experts Matt Liebowitz and Alex Fontana present end-to-end coverage of virtualizing Windows Server 2012 AD domain controllers and failover clusters, Exchange Server 2013, SQL Server 2012, and SharePoint Server 2013. They offer indispensable advice on sizing, architecture, performance, availability, monitoring, and metrics.

Throughout, the authors share valuable tips, tricks, and insights from their own experiences. For each Microsoft application, they provide "proof of concept" sample configurations and clearly explain how new features impact virtualization. You'll also find authoritative, up-to-date guidance on licensing and other issues related to ensuring full support from both Microsoft and VMware. Coverage includes • Evaluating the benefits, risks, and challenges of virtualizing Microsoft business critical applications • Identifying strategies for success associated with people, processes, and technology • Reviewing VMware vSphere features most important to virtualizing business-critical applications • Taking advantage of new virtualization-aware features built in to Windows Server 2012 domain controllers • Designing and configuring vSphere High Availability (vSphere HA) clusters to run Windows enterprise applications • Reflecting Exchange Server 2013's new architecture to maximize its performance in virtualized environments • Leveraging new SQL Server 2012 features to simplify the delivery of high availability on virtual servers • Reducing SQL Server 2012 licensing costs through virtualization • Planning, designing, and deploying virtualized SharePoint Server 2013 environments

Proven, actionable ways to install, manage, secure and monitor your vSphere 6.7 environments Key Features Get up to speed with the installation and life cycle management of a vSphere 6.7 environment, using a task-based approach Secure your vSphere environment using SSL Certificates Get introduced to the tools that are used to monitor the performance of the vSphere Environment Book Description VMware vSphere is the most comprehensive core suite of SDDC solutions on the market. It helps transform data centers into simplified on-premises private cloud infrastructures. This edition of the book focuses on the latest version, vSphere 6.7. The book starts with chapters covering the greenfield deployment of vSphere 6.7 components and the upgrade of existing vSphere components to 6.7. You will then learn how to configure storage and network access for a vSphere environment. Get to grips with optimizing your vSphere environment for resource distribution and utilization using features such as DRS and DPM, along with enabling high availability for vSphere components using vSphere HA, VMware FT, and VCHA. Then, you will learn how to facilitate large-scale deployment of stateless/stateful ESXi hosts using Auto Deploy. Finally, you will explore how to upgrade/patch a vSphere environment using vSphere Update Manager, secure it using SSL certificates, and then monitor its performance with tools such as vSphere Performance Charts and esxtop. By the end of this book, you'll be well versed in the core functionalities of vSphere 6.7 and be able to effectively deploy, manage, secure, and monitor your environment. What you will learn Deploy a new vSphere 6.7 environment or upgrade an existing vSphere environment to version 6.7 Learn how to configure and manage storage and network access for a vSphere environment Enable high availability for Hosts, VMs and vCenter Server Optimize your vSphere environment for resource distribution/utilization Patch or upgrade a vSphere environment using vSphere Update Manager Secure vSphere infrastructure components using SSL certificates Effectively monitor the performance of your vSphere environment Who this book is for If you are a systems administrator, support engineer, or anyone who wants to learn how to install, configure, and manage a vSphere environment in a quick, hands-on manner, then this book is for you. Consultants and infrastructure architects who wish to design and deploy vSphere 6.7 environments will also find this book helpful.

Over 75 practical and intriguing recipes to confidently design an efficient virtual data center with VMware vSphere 6.X About This Book Get the first book on the market that helps you design a virtualized data center with VMware vSphere 6 Achieve enhanced compute, storage, network, and management capabilities for your virtual data center Exciting and practical recipes help you to design a virtual data easily by leveraging the features of VMware vSphere 6 Who This Book Is For If you are an administrator or consultant interested in designing virtualized datacenter environments using VMware vSphere 6.x or previous versions of vSphere and the supporting components, this book is for you. It will help both new and experienced architects deliver professional VMware vSphere virtual datacenter designs. What You Will Learn Identify key factors related to a vSphere design and apply them to every step of the design process Mitigate security risks and meet compliance requirements in a vSphere design. Create a vSphere conceptual design by identifying technical and business requirements Determine the type of database to use based on the deployment size. Design for performance, availability, recoverability, manageability, and security Map the logical resource design into the physical vSphere design Create professional vSphere design documentation to ensure a successful implementation of the vSphere design Leverage the latest vSphere 6.x features to ensure manageability, performance, availability, and security in a virtual datacenter design In Detail VMware is the industry leader in data center virtualization. The vSphere 6.x suite of products provides a robust and resilient platform to virtualize server and application workloads. This version comes along with new features such as ESXi Security enhancements, fault tolerance, high availability enhancements, and virtual volumes, thus simplifying the secure management of resources, the availability of applications, and performance enhancements of workloads deployed in the virtualized datacenter. This book provides recipes to create a virtual datacenter design using the features of vSphere 6.x by guiding you through the process of identifying the design factors and applying them to the logical and physical design process. The book provides steps that walk you through the design process from beginning to end, right from the discovery process to creating the conceptual design; calculating the resource requirements of the logical storage, compute, and network design; mapping the logical requirements to a physical design; security design; and finally creating the design documentation. The recipes in this book provide guidance on making design decisions to ensure the successful creation, and ultimately the successful implementation, of a VMware vSphere 6.x virtual data center design. If you are an administrator of a virtual environment and have used vROps before but want to gain a professional understanding by implementing complex tasks easily with it, then this book is for you.

VMware VSphere Optimize and Scale. Lecture manual, volume 1 ; ESXi 6 and vCenter Server 6 Mastering VMware vSphere 6 John Wiley & Sons

Micro-segmentation - Day 1 brings together the knowledge and guidance for planning, designing, and implementing a modern security architecture for the software-defined data center based on micro-segmentation. VMware NSX makes network micro-segmentation feasible for the first time. It enables granular firewalling and security policy enforcement for every workload in the data center, independent of the network topology and complexity. Micro-segmentation with NSX already helped over a thousand organizations improve the security posture of their software-defined data center by fundamentally changing the way they approach security architecture. Micro-segmentation - Day 1 is your roadmap to simplify and enhance security within software-defined data centers running NSX. You will find insights and recommendations proven in the field for moving your organization from a perimeter-centric security posture to a micro-segmented architecture that provides enhanced security and visibility within your data center.

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. 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

Deliver great business value by adopting the virtualization platform VMware vSphere 6.5, from the design to the deployment About This Book This new edition is based on vSphere 6.5 and has described new features in different areas, including management, security, scalability, availability and so on. Design, deploy and manage VMware datacenters Implement monitoring and security of VMware workloads with ease. Who This Book Is For If you are an administrator, infrastructure engineer, IT architect, or an IT consultant and analyst who has basic knowledge of VMware vSphere and now wants to master it, then this book is for you. What You Will Learn Get a deep understanding of vSphere 6.5 functionalities Design and plan a virtualization environment based on vSphere 6.5 Manage and administer a vSphere 6.5 environment and resources Get tips for the VCP6-DCV and VCIX6-DCV exams (along with use of the vSphere 6 documentation) Implement different migration techniques to move your workload across different environments. Save your configuration, data and workload from your virtual infrastructure. In Detail VMware vSphere 6.5 provides a powerful, flexible and secure foundation for next-generation applications which helps you create an effective digital transformation. This book will be based on VMware vSphere 6.5 which empowers you to virtualize any complex application with ease. You'll begin by getting an overview of all the products, solutions and features of the vSphere 6.5 suite, comparing the evolutions with the previous releases. Next ,you'll design and plan a virtualization infrastructure to drive planning and performance analysis. Following this , you will be proceeding with workflow and installation of components. New network trends are also covered which will help you in optimally designing the vSphere environment. You will also learn the practices and procedures involved in configuring and managing virtual machines in a vSphere infrastructure. With vSphere 6.5, you'll make use of significantly more powerful capabilities for patching, upgrading, and managing the configuration of the virtual environment. Next we'll focus on specific availability and resiliency solutions in vSphere. Towards the end of the book you will get information on how to save your configuration, data and workload from your virtual infrastructure. By the end of the book you'll learn about VMware vSphere 6.5 right from design to deployment and management. Style and Approach This book acts as a reference guide providing real-world scenarios and a possible baseline for each virtualization project based on VMware vSphere.

Virtualizing and Tuning Large-Scale Java Platforms Technical best practices and real-world tips for optimizing enterprise Java applications on VMware vSphere® Enterprises no longer ask, "Can Java be virtualized"? Today, they ask, "Just how large can we scale virtualized Java application platforms, and just how efficiently can we tune them?" Now, the leading expert on Java virtualization answers these questions, offering detailed technical information you can apply in any production or QA/test environment. Emad Benjamin has spent nine years virtualizing VMware's own enterprise Java applications and working with nearly 300 leading VMware customers on projects of all types and sizes—from 100 JVMs to 10,000+, with heaps from 1GB to 360GB, and including massive big-data applications built on clustered JVMs. Reflecting all this experience, he shows you how to successfully size and tune any Java workload. This reference and performance "cookbook" identifies high-value optimization opportunities that apply to physical environments, virtual environments, or both. You learn how to rationalize and scale existing Java infrastructure, modernize architecture for new applications, and systematically benchmark and improve every aspect of virtualized Java performance. Throughout, Benjamin offers real performance studies, specific advice, and "from-the-trenches" insights into monitoring and troubleshooting. Coverage includes --Performance issues associated with large-scale Java platforms, including consolidation, elasticity, and flexibility --Technical considerations arising from theoretical and practical limits of Java platforms --Building horizontal in-memory databases with VMware vFabric SQLFire to improve scalability and response times --Tuning large-scale Java using throughput/parallel GC and Concurrent Mark and Sweep (CMS) techniques --Designing and sizing a new virtualized Java environment --Designing and sizing new large-scale Java platforms when migrating from physical to virtualized deployments --Designing and sizing large-scale Java platforms for latency-sensitive in-memory databases --Real-world performance studies: SQLFire vs. RDBMS, Spring-based Java web apps, vFabric SpringTrader, application tiers, data tiers, and more --Performance differences between ESXi3, 4.1, and 5 --Best-practice considerations for each type of workload: architecture, performance, design, sizing, and high availability --Identifying bottlenecks in the load balancer, web server, Java application server, or DB Server tiers --Advanced vSphere Java performance troubleshooting with esxxtop --Performance FAQs: answers to specific questions enterprise customers have asked

In this IBM® Redbooks® publication, we describe recommendations based on an IBM b-type storage area network (SAN) environment that is utilizing VMware vSphere ESXi. We describe the hardware and software and the unique features that they bring to the marketplace. We then highlight those features and how they apply to the SAN environment, and the best practices for ensuring that you get the best out of your SAN. For background reading, we recommend the following Redbooks publications: - Introduction to Storage Area Networks and System Networking, SG24-5470 - IBM System Storage SAN Volume Controller Best Practices and Performance Guidelines, SG24-7521 - IBM System

Storage SAN Volume Controller and Storwize V7000 Replication Family Services, SG24-7574 - Implementing the IBM System Storage SAN Volume Controller V6.3, SG24-7933 - IBM SAN Volume Controller Stretched Cluster with PowerVM and PowerHA, SG24-8142 - Implementing the IBM SAN Volume Controller and FlashSystem 820, SG24-8172 - IBM System Storage DS8000 Copy Services for Open Systems, SG24-6788 - IBM System Storage DS8000: Host Attachment and Interoperability, SG24-8887 This book is aimed at pre- and post-sales support, system administrators, and storage administrators.

Achieve the performance, scalability, and ROI your business needs What can you do at the start of a virtualization deployment to make things run more smoothly? If you plan, deploy, maintain, and optimize vSphere solutions in your company, this unique book provides keen insight and solutions. From hardware selection, network layout, and security considerations to storage and hypervisors, this book explains the design decisions you'll face and how to make the right choices. Written by two virtualization experts and packed with real-world strategies and examples, VMware vSphere Design, Second Edition will help you design smart design decisions. Shows IT administrators how plan, deploy, maintain, and optimize vSphere virtualization solutions Explains the design decisions typically encountered at every step in the process and how to make the right choices Covers server hardware selection, network topology, security, storage, virtual machine design, and more Topics include ESXi hypervisors deployment, vSwitches versus dvSwitches, and FC, FCoE, iSCSI, or NFS storage Find out the "why" behind virtualization design decisions and make better choices, with VMware vSphere Design, Second Edition, which has been fully updated for vSphere 5.x.

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