Administering Vmware Virtual San Pubs Vmware

Data is the new currency of business, the most critical asset of the modern organization. In fact, enterprises that can gain business insights from their data are twice as likely to outperform their competitors. Nevertheless, 72% of them have not started, or are only planning, big data activities. In addition, organizations often spend too much money and time managing where their data is stored. The average firm purchases 24% more storage every year, but uses less than half of the capacity that it already has. The IBM® Storwize® family, including the IBM SAN Volume Controller Data Platform, is a storage virtualization system that enables a single point of control for storage resources. This functionality helps support improved business application availability and greater resource use. The following list describes the business objectives of this system: To manage storage resources in your information technology (IT) infrastructure To make sure that those resources are used to the advantage of your business To do it quickly, efficiently, and in real time, while avoiding increases in administrative costs Virtualizing storage with Storwize helps make new and existing storage more effective. Storwize includes many functions traditionally deployed separately in disk systems. By including these functions in a virtualization system, Storwize standardizes them across virtualized storage for greater flexibility and potentially lower costs. Storwize functions benefit all virtualized storage. For example, IBM Easy Tier® optimizes use of flash memory. In addition, IBM Real-time CompressionTM enhances efficiency even further by enabling the storage of up to five times as much active primary data in the same physical disk space. Finally, high-performance thin provisioning helps automate provisioning. These benefits can help extend the useful life of existing storage assets, reducing costs. Integrating these functions into Storwize also means that they are designed to operate smoothly together, reducing management effort. This IBM Redbooks® publication provides information about the latest features and functions of the Storwize V7000 Gen2 and software version 7.3 implementation, architectural improvements, and Easy Tier.
Gain expertise in troubleshooting most common issues to implement vSphere environments with ease About This Book Plan, analyze, and design effective solutions for your vSphere environment Troubleshoot problems related to vSphere performance Familiarize yourself with the advanced troubleshooting conceptsand become an xpert level administrator Who This Book Is For The books is intended for mid-level System Engineers and System Integrators who want to learn VMware power tools to troubleshoot and manage the vSphere infrastructure. Good knowledge level and understanding of virtualization is expected. What You Will Learn Configure vSphere management assistant and troubleshooting tools Use troubleshooting tools to monitor performance and troubleshoot different issues Learn how to troubleshoot High Availability and other commonly known problems with clusters such as insufficient resources, failing heartbeats Use Direct Console User Interface (DCUI) to verify configuration Diagnose storage issues including iSCSI, NFS and VMFS problems Manage vSphere Network Virtual and Distributed Switches, Trunks, VLANS Monitor and shape network traffic, configure routes and DNS Quickly resolve common day-to-day problems by analysing logs of VMware vSphere hosts and VMware vCenter Server Debug and resolve commonly known vSphere Cluster problems In Detail VMware vSphere is the leading server virtualization platform with consistent management for virtual data centers. It enhances troubleshooting skills to diagnose and resolve day to day problems in your VMware vSphere infrastructure environment. This book will provide you practical hands-on knowledge of using different performance monitoring and troubleshooting tools to manage and troubleshoot the vSphere infrastructure. It begins by introducing systematic approach for troubleshooting different problems and show casing the troubleshooting techniques. You will be able to use the troubleshooting tools to monitor performance, and troubleshoot issues related to Hosts and Virtual Machines. Moving on, you will troubleshoot High Availability, storage I/O control problems, virtual LANS, and iSCSI, NFS, VMFS issues. By the end of this book, you will be able to analyze and solve advanced issues related to vShpere environment such as vcenter certificates, database problems, and different failed state errors. Style and approach A step-by-step guide full of real world scenarios that will enhance advanced knowledge, skills, and abilities to achieve competence in troubleshooting the VMware vSphere environment. Basic concepts of vSphere and the most common vSphere infrastructure problems are explained with practical solutions to resolve it.
This is an easy-to-follow guide that will help you learn everything you need to know to administer backup, replication, and recovery in your VMware vSphere environment, with Veeam Backup and Replication. This book is aimed at VMware vSphere administrators looking to protect their infrastructure by utilizing the world's leading modern data protection solution, specifically designed for virtual environments. A good understanding of VMware vSphere architecture is recommended, but prior knowledge of Veeam Backup and Replication is not required.
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 6.7s 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.
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.

Plan, design, deploy, and administer the solutions available in VxRail Appliance Key Features Learn how to plan and design the VxRail HCI system Understand VxRail's administration, lifecycle management, and cluster scale-out Explore migration methodologies for VxRail systems Book Description Hyper-converged infrastructure (HCI) can help you simplify the provisioning and daily operations of computing and storage. With this book, you'll understand how HCI can offload the day 0 deployment and day-to-day operations of a system administrator. You'll explore the VxRail Appliance, which is an HCI solution that provides lifecycle management, automation, and operational simplicity. Starting with an overview of the VxRail Appliance system architecture and components, you'll understand the benefits of the VxRail system and compare it with the environment of traditional servers and storage. As you advance, the book covers topics such as disaster recovery and active-active and active-passive solutions for VxRail. By the end of this book, you'll have gained the confidence to manage the deployment, administration, planning, and design of a VxRail system. What you will learn Set up the hardware and software requirements for a VxRail installation Monitor the status of VxRail appliances with the VxRail Manager plugin Get to grips with all the administration interfaces used to manage the VxRail appliance Understand vCenter roles and permissions management in the VxRail cluster Discover best practices for vSAN configuration in the VxRail cluster Find out about VxRail cluster scale-out rules and how to expand the VxRail cluster Deploy active-passive solutions for VxRail with VMware Site Recovery Manager (SRM) Who this book is for If you are a system architect, system administrator, or consultant involved in planning and deploying VxRail HCI or want to learn how to use VxRail HCI, then this book is for you. Equivalent knowledge and administration experience with ESXi and vCenter Server will be helpful.

This IBM® Redbooks® publication describes the IBM Storage Area Network and IBM SAN Volume Controller Stretched Cluster solution when combined with VMware. We describe guidelines, settings, and implementation steps necessary to achieve a satisfactory implementation. Business continuity and continuous application availability are among the top requirements for many organizations today. Advances in virtualization, storage, and networking have made enhanced business continuity possible. Information technology solutions can now be designed to manage both planned and unplanned outages, and the flexibility and cost efficiencies available from cloud computing models. IBM has designed a solution that offers significant functionality for maintaining business continuity in a VMware environment. This functionality provides the capability to dynamically move applications across data centers without interruption to those applications. The live application mobility across data centers relies on these products and technology: The industry-proven VMware Metro vMotion IBM System Storage® SAN Volume Controller Stretched Cluster solution A Layer 2 IP Network and storage networking infrastructure for high performance traffic management DC interconnect

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VMware ESX Server in the Enterprise Planning and Securing Virtualization Servers The Most Complete, Practical, Solutions-Focused Guide to Running ESX Server 3 VMware ESX Server in the Enterprise is the definitive, real-world guide to planning, deploying, and managing today's leading virtual infrastructure platform in mission-critical environments. Drawing on his extensive experience consulting on large-scale ESX Server implementations, Edward L. Haletky brings together an unprecedented collection of tips, best practices, and field-tested solutions. More than any other author, he illuminates the real issues, tradeoffs, and pitfalls associated with ESX Server–and shows how to make the most of it in your unique environment. Haletky covers the entire lifecycle: planning, installation, system monitoring, tuning, clustering, security, disaster recovery, and much more. Throughout, he supports his recommendations with examples from real-world deployments. He also provides detailed checklists for handling crucial issues such as caching, networking, storage, and hardware selection. Many of his techniques and practices apply to all current virtualization platforms, not just ESX Server. This book will be an indispensable resource for every network architect, administrator, and IT professional who works with virtual servers. ESX Server newcomers will find the soup-to-nuts introduction they desperately need; experienced users will find an unparalleled source of field-tested answers and solutions. In this book, you'll learn how to: • Identify key differences between ESX v3.x.y and ESX v2.5.x and their implications • Perform a complete installation–with automated scripting techniques and samples • Efficiently audit, monitor, and secure ESX Server • Discover SAN storage pitfalls and solutions–with detailed guidance for specific SANs, switches, and fibre-channel adapters • Understand ESX Server networking: NIC teaming, vSwitches, network lag, and troubleshooting • Configure ESX Server via the Management User Interface, Virtual Center client, and command line interface • Install Windows, Linux, and NetWare VMs: prepare media images, place configuration files, handle sizing and swap files, and more • Use Dynamic Resource Load Balancing to consistently achieve utilization goals • Implement effective backup and disaster recovery procedures Edward L. Haletky owns AstroArch Consulting, Inc., a consultancy specializing in virtualization, security, and networking. He has been rated by his peers on the VMware Discussion Forums as a "virtuoso" for his work in answering VMware security and configuration questions. Prior to establishing AstroArch, Haletky was a member of Hewlett-Packard's Virtualization, Linux, and High-Performance Technical Computing teams. He holds a degree in Aeronautical and Astronautical Engineering from Purdue University.

Your One-Stop Reference for VMware vSphere Automation If you manage vSphere in a Windows environment, automatingroutine tasks can save you time and increase efficiency. VMwarevSphere PowerCLI is a set of pre-built commands based on WindowsPowerShell that is designed to help you automate vSphere processesinvolving virtual machines, datacenters, storage, networks, andmore. This detailed guide—using a practical, task-basedapproach and real-world examples—shows you how to get themost out of PowerCLI's handy cmdlets. Learn how to: Automate vCenter Server and ESX/ESX(i) Server deployment andconfiguration Create and configure virtual machines and use vApps Secure, back up, and restore your virtual machines Monitor, audit, and report the status of your vSphereenvironment Use the PowerCLI SDK, PowerWF Studio, and vEcoShell Schedule and view automation Add a GUI front end to your scripts A fast-paced, task-oriented Cookbook covering recipes on the installation and configuration of vSphere 5.1 components. The recipes are accompanied with relevant screenshots with an intention to provide a visual guidance as well. The book concentrates more on the actual task rather than the theory around it, making it easier to understand what is really needed to achieve the task.This book is a guide for anyone who wants to learn how to install and configure VMware vSphere components. This is an excellent handbook for support professionals or for anyone intending to give themselves a head start in learning how to install and configure vSphere 5.1 components. It is also a good task-oriented reference material for consultants who design and deploy vSphere environments.

Enhance your virtualization skills by mastering storage and network virtualization with automation across different Clouds Key Features Migrate and build your applications in Hybrid Cloud with VMware Cross Cloud components and services Gain in-depth configuration insights of VMware Cross Cloud architecture Learn to migrate applications from VMware to AWS and IBM Cloud Book Description Over the past two decades, VMware vSphere has been known as the most trusted and reliable virtualization platform. VMware Cross-Cloud Architecture shows you how to design and configure Cross Cloud Architecture by using VMware Cloud Foundation and vRealize Suite with various use cases across private, public, and hybrid Cloud. This book takes you through everything from a basic understanding of virtualization to advanced aspects of storage and network virtualization, clustering, automation, and management. This book will be your guide to designing all aspects of Cloud. We start with the challenges faced by a traditional data center, define problem statements for you, and then brief you on respective solutions. Moving on, all kinds of virtualization and Cloud offerings from AWS and IBM Soft Layer are introduced and discussed in detail. Then, you'll learn how to design IT infrastructures for new and existing applications with a combination of Cloud Foundation, vRealize Suite, and vSphere enabled with VSAN and NSX. Furthermore, you'll learn how to design and configure high availability, disaster recovery, and apply an appropriate compliance matrix. Toward the end of the book, you will learn how to calculate the TCO/ROI, along with the VMware products packaging and licensing in detail. What you will learn Install and configure the Cloud foundation with Cross-Cloud services Configure vSphere high availability with the vCenter redundancy setup Architect and configure VMware with AWS Cloud Deploy VMware components in IBM Soft Layer Extend your DR setup with VMware to consume DRaaS Design and configure software-defined networking Implement compliance regulations to fix violations Who this book is for This book is for administrators, Cloud architects and network engineers who want to globalize their infrastructure using VMware and AWS services. An initial setup of workloads and data center is beneficial.

Organizations of all sizes are faced with the challenge of managing massive volumes of increasingly valuable data. However, storing this data can be costly, and extracting value from the data is becoming more and more difficult. IT organizations have limited resources, but must stay responsive to dynamic environments and act quickly to consolidate, simplify, and optimize their IT infrastructures. The IBM® Storwize® V3700 system provides a solution that is affordable, easy to use, and self-optimizing, which enables organizations to overcome these storage challenges. Storwize V3700 delivers efficient, entry-level configurations that are specifically 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, Storwize V3700 offers advanced software capabilities that are usually found in more expensive systems. Built on innovative IBM technology, Storwize V3700 addresses the block storage requirements of small and midsize organizations, Storwize V3700 is designed to accommodate the most common storage network technologies. This design enables easy implementation and management. Storwize V3700 includes the following features: Web-based GUI provides point-and-click management capabilities. Internal disk storage virtualization enables rapid, flexible provisioning and simple configuration changes. Thin provisioning enables applications to grow dynamically, but only use space they actually need. Enables simple data migration from external storage to Storwize V3700 storage (one-way from another storage device). Remote Mirror creates copies of data at remote locations for disaster recovery. IBM FlashCopy® creates instant application copies for backup or application testing. This IBM Redbooks® publication is intended for pre-sales and post-sales technical support professionals and storage administrators. The concepts in this book also relate to the IBM Storwize V3500. This book was written at a software level of version 7 release 4.

The two-volume set LNCS 10627 and 10628 constitutes the refereed proceedings of the 11th International Conference on Combinatorial Optimization and Applications, COCOA 2017, held in Shanghai, China, in December 2017. The 59 full papers and 19 short papers presented were carefully reviewed and selected from 145 submissions. The papers cover most aspects of theoretical computer science and combinatorics related to computing, including classic combinatorial optimization, geometric optimization, complexity and data structures, and graph theory. They are organized in topical sections on network, approximation algorithm and graph theory, combinatorial optimization, game theory, and applications.

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.

Learn virtualization skills by building your own virtual machine Virtualization Essentials, Second Edition provides new and aspiring IT professionals with immersive training in working with virtualization environments. Clear, straightforward discussion simplifies complex concepts, and the hands-on tutorial approach helps you quickly get up to speed on the fundamentals. You'll begin by learning what virtualization is and how it works within the computing environment, then you'll dive right into building your own virtual machine. You'll learn how to set up the CPU,

memory, storage, networking, and more as you master the skills that put you in-demand on the job market. Each chapter focuses on a specific goal, and concludes with review questions that test your understanding as well as suggested exercises that help you reinforce what you've learned. As more and more companies are leveraging virtualization, it's imperative that IT professionals have the skills and knowledge to interface with virtualization-centric infrastructures. This book takes a learning-by-doing approach to give you hands-on training and a core understanding of virtualization. Understand how virtualization works Create a virtual machine by scratch and migration Configure and manage basic components and supporting devices Develop the necessary skill set to work in today's virtual world Virtualization was initially used to build test labs, but its use has expanded to become best practice for a tremendous variety of IT solutions including high availability, business continuity, dynamic IT, and more. Cloud computing and DevOps rely on virtualization technologies, and the exponential spread of these and similar applications make virtualization proficiency a major value-add for any IT professional. Virtualization Essentials, Second Edition provides accessible, user-friendly, informative virtualization training for the forward-looking pro.

A comprehensive, practical guide to accessing virtual desktops, applications, and services through a unified platform About This Book This is the first book on the market that delivers desktops and applications through a single Virtual Desktop Infrastructure platform Reduce enterprise costs by dynamically allocating resources with virtual storage, compute and networking This comprehensive guide provides simplified operations, improved security, and accelerated time-to-value using VMware Horizon 7 Who This Book Is For If you are a newcomer to system administration, and you wish to implement the Horizon environment, then this book is for you. Prior knowledge of Horizon is beneficial. What You Will Learn Walk through the configuration of VMware Horizon, including the new Horizon Access Point appliance Implement a multi-site VMware Horizon pod using the Cloud Pod Architecture feature Understand the integration between VMware Horizon and VSAN, and see how they are deployed together Explore how to implement and maintain Microsoft RDS and Linux and Windows Desktop Pools Create and optimize desktop master images. Understand how to manage the SSL certificates for each of the VMware Horizon components. In Detail VMware Horizon 7 has been a buzz since it was announced. One of the major reasons is the introduction of the new Instant Clones feature. This book will complement the product documentation by providing real-life examples of how it is implemented along with the latest features and components of the platform. We'll explore the latest features of the platform, including those added through product acquisitions such as User Environment Manager and App Volumes. Further on, you will also be introduced to the new capabilities added to the core product such Linked-Clone RDS pools. Upon completion of this book, you will have an understanding of the capabilities and benefits VMware Horizon can provide to your organization, and how each of its components are implemented. Style and approach This comprehensive guide focuses on the practicality of VMware Horizon and how you can implement it in your organization.

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.

To help readers understand virtualization and cloud computing, this book is designed to cover the theories and concepts enough to understand the cutting-edge technology. Meanwhile, in this book, the reader can gain hands-on skills on VMware Cloud Suite to create a private cloud. With the academic support from VMware, readers can use the VMware supported software to create various virtualized IT infrastructures sophisticated enough for various sized enterprises. Then, the virtualized IT infrastructure can be made available to an enterprise through the private cloud services.

Design and implement Citrix farms based on XenApp 6.5.

The Fibre Channel Association is a group of companies involved in developing devices and technologies used with Fibre Channel, a very high-speed bus technology capable of bi-directional data transfer at rates in excess of one gigabit per second. Describes how to use Fibre Channel technology to connect between storage devices and network servers for maximum data transfer Authoring association is a group of companies involved in developing devices and technologies used with Fibre Channel Discuses cutting edge technology capable of bi-directional data transfer at rates in excess of one gigabit per second

IBM® Spectrum Virtualize Software Version 7.8 provides software-defined storage capabilities across various platforms, including IBM SAN Volume Controller, IBM Storwize® V7000, Storwize V7000 (Unified), Storwize V5000, Storwize V3700, and Storwize V3500. These offerings help clients reduce the complexities and cost of managing their storage in the following ways: Centralizing management of storage volumes to enable administrators to manage storage volumes from a single point Improving utilization of storage capacity with virtual volumes to enable businesses to tap into previously unused disk capacity Avoiding downtime for backups, maintenance, and upgrades Performing data migration without disruption to applications Enabling all storage devices to be organized into storage pools from which virtual volumes, whether standard, compressed, or thin-

provisioned, are created with the characteristics that you want Delivering automation of storage management with SmartCloud Virtual Storage Center, IBM Tivoli® Storage Productivity Center (as applicable by platform), and IBM Tivoli Storage FlashCopy® Manager (as applicable by platform) Increasing the performance efficiency of storage pools with IBM Easy Tier® Restoring data access quickly with near and remote copy capabilities across Fibre Channel (FC), Fibre Channel over Ethernet (FCoE), and IP networks In this IBM Redbooks® publication, which is aimed at storage administrators and technical professionals, we describe the IBM HyperSwap® capability in IBM SpectrumTM Virtualize Software V7.8. HyperSwap delivers high availability (HA) and disaster recovery (DR) in one solution and reuses capital investments to achieve a range of recovery and management options that are transparent to host operations. This book describes how you can use HyperSwap with VMware to create an environment that can withstand robust workloads.

Along with servers and networking infrastructure, networked storage is one of the fundamental components of a modern data center. Because storage networking has evolved over the past two decades, the industry has settled on the basic storage networking technologies. These technologies are Fibre Channel (FC) storage area networks (SANs), Internet Small Computer System Interface (iSCSI)-based Ethernet attachment, and Ethernet-based network-attached storage (NAS). Today, lossless, low-latency, high-speed FC SANs are viewed as the high-performance option for networked storage. iSCSI and NAS are viewed as lower cost, lower performance technologies. The advent of the 100 Gbps Ethernet and Data Center Bridging (DCB) standards for lossless Ethernet give Ethernet technology many of the desirable characteristics that make FC the preferred storage networking technology. These characteristics include comparable speed, low latency, and lossless behavior. Coupled with an ongoing industry drive toward better asset utilization and lower total cost of ownership, these advances open the door for organizations to consider consolidating and converging their networked storage infrastructures with their Ethernet data networks. Fibre Channel over Ethernet (FCoE) is one approach to this convergence, but 10-Gbps-enabled iSCSI also offers compelling options for many organizations with the hope that their performance can now rival that of FC. This IBM® Redbooks® publication is written for experienced systems, storage, and network administrators who want to integrate the IBM System Networking and Storage technology successfully into new and existing networks. This book provides an overview of today's options for storage networking convergence. It reviews the technology background for each of these options and then examines detailed scenarios for them by using IBM and IBM Business Partner convergence products.

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 SystemsTM with PowerVMTM 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.

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.

IBM® System Storage® N series technology enables companies to extend their virtual infrastructures to include the benefits of advanced storage virtualization. The N series offers unified storage solutions that provide industry-leading technologies in the areas of storage efficiencies, instantaneous virtual machine and datastore cloning for virtual servers and virtual desktops, and virtual data center backup and business continuance solutions. This IBM Redbooks® publication reviews the best practices for anyone who is implementing VMware® vSphere with N series unified storage arrays.

This IBM® Redbooks® publication provides best practices for the IBM System Storage N sereis and SnapManager® for Virtual Infrastructure 2.0 (SMVI). We address the resource utilization issues typically found within virtual environments by leveraging the underlying Snapshot technology, which enables you to create point-in-time copies of your virtual machines or entire data stores and then restore from these backup copies at any level of granularity, datastore, VM, disk (VMDK), or guest file, simply and quickly when required. In addition, we provide best practices for protecting the SMVI server and recovering in case of a disaster. Furthermore, we explain the seamless integration of N series storage solutions, including MetroCluster, so customers can leverage storage and virtualization technologies to create dynamic infrastructures that can create tremendous business value. The reader of this book will gain a deep understanding of how to implement SnapManager for Virtual Infrastructure in VMware vSphere environments.

The planning of micro-segmentation can be an overwhelming task because most organizations have tens to thousands of applications in their data centers. Knowing which applications and how to start planning for the implementation of a Zero-Trust security posture with VMware NSX and micro-segmentation is critical. As we go through VMware NSX Micro-Segmentation ¿ Day 1 Practical Guide, we will arm you with the knowledge you need to begin building a scalable methodology and planning for the applications you are going to secure. For immediate micro-segmentation needs, we'll take a look at VMware Log Insight. We¿ll cover the new feature in NSX 6.3 called Application Rule Manager, which scales up our ability to plan and implement Distributed Firewall Rulesets. And finally, we¿ll look at vRealize Network Insight, a product that introduces data center scale security planning and operations. We will compare and contrast when to use each tool, and demonstrate detailed step-by-step processes for using them.

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.

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.

A complete guide to planning and designing solutions based on VMware View 5.

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 gustavoaasantana.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 Bhaiji, Senior Manager, Expert Certifications (CCIE, CCDE, CCAr), Learning@Cisco "When one first looks at those classic Cisco Data Center blueprints, it is very common to become distracted with the overwhelming number of pieces and linkages. By creating a solid theoretical foundation and providing rich sets of companion examples to illustrate each concept, Gustavo''s book brings hope back to IT Professionals from different areas of expertise. Apparently complex topics are demystified and the insertion of products, mechanisms, protocols and technologies in the overall Data Center Architecture is clearly explained, thus enabling you to achieve robust designs and successful deployments. A must read... Definitely!" -- Alexandre M. S. P. Moraes, Consulting Systems Engineer -- Author of "Cisco Firewalls"

This IBM® Redbooks® publication describes the IBM storage area network (SAN) and IBM SpectrumTM Virtualize, and SAN Volume Controller Enhanced Stretched Cluster configuration when combined with VMware. It describe guidelines, settings, and implementation steps necessary to achieve a satisfactory implementation. Business continuity and continuous availability of applications are among the top requirements for many organizations today. Advances in virtualization, storage, and networking make enhanced business continuity possible. Information technology solutions can now be designed to manage both planned and unplanned outages, and to take advantage of the flexibility, efficient use of resources, and cost savings that cloud computing offers. The IBM Enhanced Stretched Cluster design offers significant functions for maintaining business continuity in a VMware environment. You can dynamically move applications across data centers without interruption to those applications. The live application mobility across data centers relies on these products and technologies: IBM Spectrum Virtualize and SAN Volume Controller Enhanced Stretched Cluster Solution VMware Metro vMotion for live migration of virtual machines A Layer 2 IP Network and storage networking infrastructure for high-performance traffic management Data center interconnection

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.

The Complete, Hands-On Guide to Installing and Configuring VMware Site Recovery Manager 5.0 Administering VMware Site Recovery Manager 5.0 is the complete, technical, hands-on guide to VMware Site Recovery Manager (SRM) 5.0 installation and configuration for experienced VMware professionals. VMware forum moderator and vExpert Mike Laverick fully explains SRM 5.0's failover/failback procedures, walks readers through configuring storage replication with hardware from several leading suppliers, and shows how to efficiently implement fast, automated, centralized disaster recovery. Drawing on his extensive experience with SRM and vSphere, Laverick identifies common pitfalls and errors, explains why they occur, and shows exactly how to fix them. Fully up to date for SRM 5.0, this book delivers "in-the-trenches" technical knowledge you won't find anywhere else, including expert guidance for utilizing SRM 5.0's advanced new vSphere Replication (VR). Coverage includes Going "under the hood" with SRM 5.0 to thoroughly understand its operation Configuring SRM 5.0 with Dell EqualLogic Replication, EMC Celerra Replicator, EMC CLARiiON MirrorView, HP StorageWorks P4000 Virtual SAN Appliance with Remote Copy, and NetApp SnapMirror Configuring multiple LUN/volumes with virtual machines and virtual disks Installing VMware SRM and configuring vSphere Replication (VR) Using VR to replicate VMs across locations without third-party storage array-based replication Using VR to replicate a single VM or groups of VMs to the Recovery Site Efficiently configuring protected and recovery sites Using Reprotect Mode to accelerate failback and enhance VM portability Using dependencies and priority orders to configure SRM based on your existing categories of applications and services Leveraging SRM 5.0's scalability improvements to serve large-scale and/or cloud environments Defining custom recovery plans Working with alarms, export histories, and access control Implementing bidirectional relationships and shared site configurations Scripting automated site recovery Upgrading from SRM 4.1 to SRM 5.0

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.

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

This scenario-focused title provides concise technical guidance and insights for troubleshooting and optimizing networking with Hyper-V. Written by experienced virtualization professionals, this little book packs a lot of value into a few pages, offering a lean read with lots of real-world insights and best practices for Hyper-V networking optimization in Windows Server 2012. Focused guide extends your knowledge and capabilities with Hyper-V networking in Windows Server 2012 Shares hands-on insights from a team of Microsoft virtualization experts Provides pragmatic troubleshooting and optimization guidance from the field