

## Ibm Switch Configuration Guide

Network Intrusion Prevention Design Guide: Using IBM Security Network IPS  
IBM z/OS V1R12 Communications Server TCP/IP Implementation: Volume 4 Security and Policy-Based Networking  
WebSphere Application Server V8: Administration and Configuration Guide  
IBM z15 Configuration Setup  
Fabric Vision Technology  
Implementing or Migrating to an IBM Gen 5 b-type SAN  
CCNA Data Center DCICT 640-916 Official Cert Guide  
VMware Implementation with IBM System Storage DS5000  
Implementation of IBM j-type Ethernet Switches and Routers  
The New Peter Norton Programmer's Guide to the IBM PC & PS/2  
IBM zEnterprise BC12 Technical Guide  
IBM Distributed Virtual Switch 5000V Quickstart Guide  
Implementing an IBM/Cisco SAN  
SAN Multiprotocol Routing: An Introduction and Implementation  
Implementing an IBM b-type SAN with 8 Gbps Directors and Switches  
Storage and Network Convergence Using FCoE and iSCSI  
IBM Flex System V7000 Storage Node Introduction and Implementation Guide  
IBM Midrange System Storage Implementation and Best Practices Guide  
IBM Spectrum Archive Enterprise Edition V1.3.0.6: Installation and Configuration Guide  
IBM SAN Survival Guide  
Guide to the IBM Personal Computer  
IBM Virtual Disk System Quickstart Guide  
Essential Guide to the Library IBM PC.  
The Practical Guide to the IBM Personal Computer AT  
IP Multicast Protocol Configuration  
IBM Flex System and PureFlex System Network Implementation with Juniper Networks  
A Guide to the IBM Clustered Network File System  
IBM Converged Switch B32  
The IBM PC AT Programmer's Guide  
IBM Storage Networking SAN64B-6 Switch  
IBM z/OS V1R11 Communications Server TCP/IP Implementation Volume 4: Security and Policy-Based Networking  
Implementing IBM Software Defined Network for Virtual Environments  
Exploring IBM Server & Storage Technology  
Deployment Guide for InfoSphere Guardium  
Implementing IBM System Networking 10Gb Ethernet Switches  
IBM AT clone buyer's guide and handbook  
IBM Flex System p270 Compute Node Planning and Implementation Guide  
Fabric Resiliency Best Practices  
IBM Power Systems HMC Implementation and Usage Guide  
Certification Guide Series: Tivoli Storage Productivity Center V4.1

## Network Intrusion Prevention Design Guide: Using IBM Security Network IPS

"Do everything that is necessary and absolutely nothing that is not." In this IBM® Redbooks® publication, which is an update and major revision of the previous version, we have consolidated as much of the critical information as possible while discussing procedures and tasks that are likely to be encountered on a daily basis. Each of the products described has much more functionality than we could cover in just one book. The IBM SAN portfolio is rich in quality products that bring a vast amount of technicality and vitality to the SAN world. Their inclusion and selection is based on a thorough understanding of the storage networking environment that positions IBM, and therefore its customers and partners, in an ideal position to take advantage by their deployment. We discuss the latest additions to the IBM/Cisco SAN family and we show how they can be implemented in an open systems environment, focusing on the Fibre Channel protocol (FCP) environment. We address some of the key concepts that they bring to the market, and in each case, we give an overview of

those functions that are essential to building a robust SAN environment.

### **IBM z/OS V1R12 Communications Server TCP/IP Implementation: Volume 4 Security and Policy-Based Networking**

This IBM® Redbooks® publication helps you install, configure, and maintain the IBM z15™ (machine types 8561 and 8562) systems. The z15 systems offers new functions that require a comprehensive understanding of the available configuration options. This book presents configuration setup scenarios, and describes implementation examples in detail. This publication is intended for systems engineers, hardware planners, and anyone who needs to understand IBM Z® configuration and implementation. Readers should be familiar with IBM Z technology and terminology. For more information about the functions of the z15 systems, see IBM z15 Technical Introduction, SG24-8850, IBM z15 (8561) Technical Guide, SG24-8851 and IBM z15 (8562) Technical Guide, SG24-8852.

### **WebSphere Application Server V8: Administration and Configuration Guide**

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.

## **IBM z15 Configuration Setup**

In today's infrastructure, it is common to build networks based on 10 Gb Ethernet technology. The IBM® portfolio of 10 Gb systems networking products includes Top-of-Rack switches, and the embedded switches in the IBM BladeCenter® family. In 2010, IBM formed the IBM System Networking business (by acquiring BLADE Network Technologies), which is now focused on driving data center networking by using the latest Ethernet technologies. The main focus of this IBM Redbooks® publication is on the IBM System Networking 10Gb Switch Modules, which include both embedded and Top-of-Rack (TOR) models. After reading this book, you can perform basic to advanced configurations of IBM System Networking 10Gb Switch Modules. In this publication, we introduce the various 10 Gb switch models that are available today and then describe in detail the features that are applicable to these switches. We then present two architectures that use these 10 Gb switches, which are used throughout this book. These designs are based on preferred practices and the experience of authors of this book. Our intention is to show the configuration of the different features that are available with IBM System Networking 10Gb Switch Modules. We follow the three-tier Data Center design, focusing on the Access and Aggregation Layers, because those layers are the layers that IBM System Networking Switches use.

## **Fabric Vision Technology**

The most common transmission scheme used in networks today is unicast, which represents "one-to-one" transmission with one sender and one receiver. Sometimes there is a need for one host to send packets that are received by multiple hosts. The problem with implementing this kind of transmission using unicast is that the stream of packets must be replicated as many times as there are receivers. IP Multicast addresses the problem by intelligently sending only one stream of packets and then replicating the stream when it reaches the target domain that includes multiple receivers or reaches a necessary bifurcation point leading to different receiver domains. In this IBM® Redpapers™ publication, we introduce principles of IP Multicast and describe the IPv4 addressing used for multicast. We discuss the protocols that are used to implement multicast in an IP network and then provide the general IP Multicast configuration procedures and then presents IP Multicast configuration in a sample network using IBM System Networking Ethernet Switches. We conclude this paper with command references that include all commands and their parameters for configuration of multicast protocols and features. After understanding the basics of how to configure IP Multicast for the networking scenario described in this paper, IT network professionals will be able replicate a similar design and configuration to suit their network infrastructure.

## **Implementing or Migrating to an IBM Gen 5 b-type SAN**

A new edition of a classic reference book, updated to cover the new IBM hardware. It includes technical data, quick

reference charts and Norton's characteristically astute insights and covers a range of new topics as well as new information on previously covered topics.

### **CCNA Data Center DCICT 640-916 Official Cert Guide**

The Clustered Network File System (CNFS) is a capability based on IBM® General Parallel File System (GPFSTM) running on Linux® which, when combined with System x® servers or BladeCenter® Servers, IBM TotalStorage® Disk Systems, and Storage Area Networks (SAN) components, provides a scalable file services environment. This capability enables customers to run a General Parallel File System (GPFS) data-serving cluster in which some or all of the nodes actively export the file system using NFS. This IBM Redpaper™ publication shows how Cluster NFS file services are delivered and supported today through the configurable order process of the IBM Intelligent Cluster. The audience for this paper includes executive and consultant decision makers and technical administrators who want to know how to implement this solution.

### **VMware Implementation with IBM System Storage DS5000**

The IBM® b-type Gen 5 Fibre Channel directors and switches provide reliable, scalable, and secure high-performance foundations for high-density server virtualization, cloud architectures, and next generation flash and SSD storage. They are designed to meet the demands of highly virtualized private cloud storage and data center environments. This IBM Redbooks® publication helps administrators learn how to implement or migrate to an IBM Gen 5 b-type SAN. It provides an overview of the key hardware and software products and explains how to install, monitor, tune, and troubleshoot your storage area network (SAN). Read this publication to learn about fabric design, managing and monitoring your network, key tools such as IBM Network Advisor and Fabric Vision, and troubleshooting.

### **Implementation of IBM j-type Ethernet Switches and Routers**

This IBM® Redbooks® document introduces the IBM Converged Switch B32. This switch supports Fibre Channel over Ethernet (FCoE), Fibre Channel, Converged Enhanced Ethernet (CEE), and traditional Ethernet protocol connectivity for servers and storage. FCoE is a new protocol that can expand Fibre Channel into the Ethernet environment, and it helps to combine and leverage the advantages of two technologies, Fibre Channel protocol and Ethernet. Features of the IBM Converged Switch B32 include: A 32-port multiprotocol switch for server I/O consolidation Enterprise-class availability for business continuance Improved return on investment and investment protection Fabric security for mission-critical information In the related publication An Introduction to Fibre Channel over Ethernet, and Fibre Channel over Convergence Enhanced Ethernet, REDP-4493 we introduce FCoE and CEE concepts.

## **The New Peter Norton Programmer's Guide to the IBM PC & PS/2**

IBM® InfoSphere® Guardium® provides the simplest, most robust solution for data security and data privacy by assuring the integrity of trusted information in your data center. InfoSphere Guardium helps you reduce support costs by automating the entire compliance auditing process across heterogeneous environments. InfoSphere Guardium offers a flexible and scalable solution to support varying customer architecture requirements. This IBM Redbooks® publication provides a guide for deploying the Guardium solutions. This book also provides a roadmap process for implementing an InfoSphere Guardium solution that is based on years of experience and best practices that were collected from various Guardium experts. We describe planning, installation, configuration, monitoring, and administrating an InfoSphere Guardium environment. We also describe use cases and how InfoSphere Guardium integrates with other IBM products. The guidance can help you successfully deploy and manage an IBM InfoSphere Guardium system. This book is intended for the system administrators and support staff who are responsible for deploying or supporting an InfoSphere Guardium environment.

## **IBM zEnterprise BC12 Technical Guide**

## **IBM Distributed Virtual Switch 5000V Quickstart Guide**

IBM® Flex System™ products are ideally suited for data center environments that require flexible, cost-effective, secure, and energy-efficient hardware. IBM Flex System V7000 Storage Node is the latest addition to the IBM Flex Systems product family and is a modular storage system designed to fit into the IBM Flex System Enterprise chassis. When purchased in the IBM PureFlex™ configurations, IBM Flex System V7000 Storage Node is configured from the factory into the hardware solution purchased. If, however, the configuration wanted is not offered in the predefined offerings, then a "Build to Order" configuration is designed to meet your needs. IBM Flex System V7000 Storage Node includes the capability to virtualize its own internal storage in the same manner as the IBM Storwize® V7000 does. It is designed to be a scalable internal storage system to support the compute nodes of the IBM Flex System environment. This IBM Redbooks® publication introduces the features and functions of IBM Flex System V7000 Storage Node through several examples. This book is aimed at pre-sales and post-sales technical support and marketing personnel and storage administrators. It can help you understand the architecture of IBM Flex System V7000 Storage Node, how to implement it, and how to take advantage of the industry leading functions and features.

## **Implementing an IBM/Cisco SAN**

As we all know, large ocean going ships never collide with icebergs. However, occasionally life deals out some unexpected pleasures for us to cope with. Surviving any disaster in life is usually a lot easier if you have prepared adequately by taking into account the likely problems, solutions, and their implementation. In this IBM Redbooks publication, we limit ourselves to those situations in which it is likely that a SAN will be deployed. We present the IBM SAN portfolio of products, going a little under the surface to show the fault tolerant features that they utilize, and then describe solutions with all these features taken into account. Each of these solutions was built on practical experience, in some cases with cost in mind, in some cases with no cost in mind. Any well-thought-out SAN design will have taken every single one of these concerns into account, and either formulated a solution for it, or ignored it, but nonetheless understanding the potential exposure. With these points in mind, in this book we have two objectives: to position the IBM SAN products that are currently in our portfolio; and to show how those products can be configured together to build a SAN that not only allows you to survive most forms of disaster, but also provides performance benefits. So, make sure that you know what to do if you hit an iceberg!

### **SAN Multiprotocol Routing: An Introduction and Implementation**

This IBM® Redbooks® publication provides system administrators and developers with the knowledge to configure an IBM WebSphere® Application Server Version 8 runtime environment, to package and deploy applications, and to perform ongoing management of the WebSphere environment. As one in a series of IBM Redbooks publications and IBM Redpapers publications for V8, the entire series is designed to give you in-depth information about key WebSphere Application Server features. In this book, we provide a detailed exploration of the WebSphere Application Server V8 runtime administration process. This book includes configuration and administration information for WebSphere Application Server V8 and WebSphere Application Server Network Deployment V8 on distributed platforms and WebSphere Application Server for z/OS® V8. The following publications are prerequisites for this book: WebSphere Application Server V8.0 Technical Overview, REDP-4756 IBM WebSphere Application Server V8 Concepts, Planning, and Design Guide, SG24-7957

### **Implementing an IBM b-type SAN with 8 Gbps Directors and Switches**

To meet today's complex and ever-changing business demands, you need a solid foundation of compute, storage, networking, and software resources that is simple to deploy and can quickly and automatically adapt to changing conditions. You also need to make full use of broad expertise and proven preferred practices in systems management, applications, hardware maintenance, and more. The IBM® Flex System p270 Compute Node is an IBM Power Systems™ server that is based on the new dual-chip module POWER7+™ processor and is optimized for virtualization, performance, and efficiency. The server supports IBM AIX®, IBM i, or Linux operating environments, and is designed to run various

workloads in IBM PureFlex™ System. The p270 Compute Node is a follow-on to the IBM Flex System™ p260 Compute Node. This IBM Redbooks® publication is a comprehensive guide to the p270 Compute Node. We introduce the related Flex System offerings and describe the compute node in detail. We then describe planning and implementation steps including converged networking, management, virtualization, and operating system installation. This book is for customers, IBM Business Partners, and IBM technical specialists who want to understand the new offerings and plan and implement an IBM Flex System installation that involves the Power Systems compute nodes.

### **Storage and Network Convergence Using FCoE and iSCSI**

Note: This PDF is over 900 pages, so when you open it with Adobe Reader and then do a "Save As", the save process could time out. Instead, right-click on the PDF and select "Save Target As". For more than 40 years, IBM® mainframes have supported an extraordinary portion of the world's computing work, providing centralized corporate databases and mission-critical enterprise-wide applications. The IBM System z®, the latest generation of the IBM distinguished family of mainframe systems, has come a long way from its IBM System/360 heritage. Likewise, its IBM z/OS® operating system is far superior to its predecessors, providing, among many other capabilities, world-class, state-of-the-art, support for the TCP/IP Internet protocol suite. TCP/IP is a large and evolving collection of communication protocols managed by the Internet Engineering Task Force (IETF), an open, volunteer, organization. Because of its openness, the TCP/IP protocol suite has become the foundation for the set of technologies that form the basis of the Internet. The convergence of IBM mainframe capabilities with Internet technology, connectivity, and standards (particularly TCP/IP) is dramatically changing the face of information technology and driving requirements for ever more secure, scalable, and highly available mainframe TCP/IP implementations. The IBM z/OS Communications Server TCP/IP Implementation series provides understandable, step-by-step guidance about how to enable the most commonly used and important functions of z/OS Communications Server TCP/IP. This IBM Redbooks® publication explains how to set up security for your z/OS networking environment. With the advent of TCP/IP and the Internet, network security requirements have become more stringent and complex. Because many transactions come from unknown users and from untrusted networks such as the Internet, careful attention must be given to host and user authentication, data privacy, data origin authentication, and data integrity. Also, because security technologies are complex and can be confusing, we include helpful tutorial information in the appendixes of this book. For more specific information about z/OS Communications Server base functions, standard applications, and high availability, refer to the other volumes in the series: "IBM z/OS V1R11 Communications Server TCP/IP Implementation Volume 1: Base Functions, Connectivity, and Routing," SG24-7798 "IBM z/OS V1R11 Communications Server TCP/IP Implementation Volume 2: Standard Applications," SG24-7799 "IBM z/OS V1R11 Communications Server TCP/IP Implementation Volume 3: High Availability, Scalability, and Performance," SG24-7800 In addition, "z/OS Communications Server: IP Configuration Guide," SC31-8775, "z/OS Communications Server: IP Configuration Reference," SC31-8776, and "z/OS Communications Server: IP

User's Guide and Commands," SC31-8780, contain comprehensive descriptions of the individual parameters for setting up and using the functions that we describe in this book. They also include step-by-step checklists and supporting examples. It is not the intent of this book to duplicate the information in those publications, but to complement them with practical implementation scenarios that might be useful in your environment. To determine at what level a specific function was introduced, refer to "z/OS Communications Server: New Function Summary," GC31-8771.

### **IBM Flex System V7000 Storage Node Introduction and Implementation Guide**

For more than 40 years, IBM® mainframes have supported an extraordinary portion of the world's computing work, providing centralized corporate databases and mission-critical enterprise-wide applications. The IBM System z® provides world class and state-of-the-art support for the TCP/IP Internet protocol suite. TCP/IP is a large and evolving collection of communication protocols managed by the Internet Engineering Task Force (IETF), an open, volunteer, organization. Because of its openness, the TCP/IP protocol suite has become the foundation for the set of technologies that form the basis of the Internet. The convergence of IBM mainframe capabilities with Internet technology, connectivity, and standards (particularly TCP/IP) is dramatically changing the face of information technology and driving requirements for ever more secure, scalable, and highly available mainframe TCP/IP implementations. The IBM z/OS® Communications Server TCP/IP Implementation series provides understandable, step-by-step guidance about how to enable the most commonly used and important functions of z/OS Communications Server TCP/IP. This IBM Redbooks® publication explains how to set up security for the z/OS networking environment. Network security requirements have become more stringent and complex. Because many transactions come from unknown users and untrusted networks, careful attention must be given to host and user authentication, data privacy, data origin authentication, and data integrity. We also include helpful tutorial information in the appendixes of this book because security technologies can be quite complex. For more specific information about z/OS Communications Server base functions, standard applications, and high availability, refer to the other volumes in the series.

### **IBM Midrange System Storage Implementation and Best Practices Guide**

This IBM® Redbooks® publication helps you with the planning, installation, and configuration of the new IBM Spectrum® Archive v1.3.0.6 for the IBM TS4500, IBM TS3500, IBM TS4300, and IBM TS3310 tape libraries. IBM Spectrum Archive EE enables the use of the LTFS for the policy management of tape as a storage tier in an IBM Spectrum Scale based environment. It helps encourage the use of tape as a critical tier in the storage environment. This is the eighth edition of IBM Spectrum Archive Installation and Configuration Guide. IBM Spectrum Archive EE can run any application that is designed for disk files on a physical tape media. IBM Spectrum Archive EE supports the IBM Linear Tape-Open (LTO) Ultrium 8, 7, 6, and 5 tape drives in IBM TS3310, TS3500, TS4300, and TS4500 tape libraries. In addition, IBM TS1160, TS1155,

TS1150, and TS1140 tape drives are supported in TS3500 and TS4500 tape library configurations. IBM Spectrum Archive EE can play a major role in reducing the cost of storage for data that does not need the access performance of primary disk. The use of IBM Spectrum Archive EE to replace disks with physical tape in tier 2 and tier 3 storage can improve data access over other storage solutions because it improves efficiency and streamlines management for files on tape. IBM Spectrum Archive EE simplifies the use of tape by making it transparent to the user and manageable by the administrator under a single infrastructure. This publication is intended for anyone who wants to understand more about IBM Spectrum Archive EE planning and implementation. This book is suitable for IBM clients, IBM Business Partners, IBM specialist sales representatives, and technical specialists.

### **IBM Spectrum Archive Enterprise Edition V1.3.0.6: Installation and Configuration Guide**

### **IBM SAN Survival Guide**

### **Guide to the IBM Personal Computer**

### **IBM Virtual Disk System Quickstart Guide**

Offers advice on setting up, using, and selecting software for an IBM PC used for library applications

### **Essential Guide to the Library IBM PC.**

This IBM® Redbooks® publication represents a compilation of best practices for deploying and configuring IBM Midrange System Storage™ servers, which include the DS4000® and the DS5000 family of products. This book is intended for IBM technical professionals, Business Partners, and customers responsible for the planning, deployment, and maintenance of the IBM Midrange System Storage family of products. We realize that setting up DS4000 and DS5000 Storage Servers can be a complex task. There is no single configuration that will be satisfactory for every application or situation. First, we provide a conceptual framework for understanding the hardware in a Storage Area Network. Then we offer our guidelines, hints, and tips for the physical installation, cabling, and zoning, using the Storage Manager setup tasks. After that, we turn our attention to the performance and tuning of various components and features, including numerous guidelines. We look at performance implications for various application products such as DB2®, Oracle, Tivoli® Storage Manager, Microsoft®

SQL server, and in particular, Microsoft Exchange with IBM Midrange System Storage servers. Then we review the various tools available to simulate workloads and to measure, collect, and analyze performance data. We also consider the AIX® environment, including High Availability Cluster Multiprocessing (HACMP™) and General Parallel File System (GPFS™). Finally, we provide a quick guide to the storage server installation and configuration using best practices. This edition of the book also includes guidelines for managing and using the DS4000 and DS5000 with the IBM System Storage SAN Volume Controller (SVC).

### **The Practical Guide to the IBM Personal Computer AT**

The popularity of the Internet and the affordability of information technology (IT) hardware and software have resulted in an explosion dramatic increase in the number of applications, architectures, and platforms. Workloads have changed. Many applications, including mission-critical ones, are deployed on a variety of platforms, and the IBM® System z® design has adapted to this change. It takes into account a wide range of factors, including compatibility and investment protection, to match the IT requirements of an enterprise. This IBM Redbooks® publication provides information about the IBM zEnterprise® BC12 (zBC12), an IBM scalable mainframe server. IBM is taking a revolutionary approach by integrating separate platforms under the well-proven System z hardware management capabilities, while extending System z qualities of service to those platforms. The zEnterprise System consists of the zBC12 central processor complex, the IBM zEnterprise Unified Resource Manager, and the IBM zEnterprise BladeCenter® Extension (zBX). The zBC12 is designed with improved scalability, performance, security, resiliency, availability, and virtualization. The zBC12 provides the following improvements over its predecessor, the IBM zEnterprise 114 (z114): Up to a 36% performance boost per core running at 4.2 GHz Up to 58% more capacity for traditional workloads Up to 62% more capacity for Linux workloads The zBX infrastructure works with the zBC12 to enhance System z virtualization and management through an integrated hardware platform that spans mainframe, IBM POWER7®, and IBM System x® technologies. The federated capacity from multiple architectures of the zEnterprise System is managed as a single pool of resources, integrating system and workload management across the environment through the Unified Resource Manager. This book provides an overview of the zBC12 and its functions, features, and associated software support. Greater detail is offered in areas relevant to technical planning. This book is intended for systems engineers, consultants, planners, and anyone who wants to understand zEnterprise System functions and plan for their usage. It is not intended as an introduction to mainframes. Readers are expected to be generally familiar with existing IBM System z technology and terminology.

### **IP Multicast Protocol Configuration**

In this IBM® Redpaper™, we compiled best practices for planning, designing, implementing, and maintaining IBM

Midrange storage solutions. We also compiled configurations for a VMware ESX and VMware ESXi Server-based host environment. Setting up an IBM Midrange Storage Subsystem is a challenging task and our principal objective in this book is to provide you with a sufficient overview to effectively enable storage area network (SAN) storage and VMWare. There is no single configuration that is satisfactory for every application or situation. However, the effectiveness of VMware implementation is enabled by careful planning and consideration. Although the compilation of this publication is derived from an actual setup and verification, we did not stress test or test for all possible use cases that are used in a limited configuration assessment. Because of the highly customizable nature of a VMware ESXi host environment, you must consider your specific environment and equipment to achieve optimal performance from an IBM Midrange Storage Subsystem. When you are weighing the recommendations in this publication, you must start with the first principles of input/output (I/O) performance tuning. Remember that each environment is unique and the correct settings that are used depend on the specific goals, configurations, and demands for the specific environment. This Redpaper is intended for technical professionals who want to deploy VMware ESXi and VMware ESX Servers with IBM Midrange Storage Subsystems.

### **IBM Flex System and PureFlex System Network Implementaton with Juniper Networks**

"Do everything that is necessary and absolutely nothing that is not." This IBM® Redbooks® publication, written at a Data Center Fabric Manager v10.1.4 and Fabric Operating System v6.4 level, consolidates critical information while also covering procedures and tasks that you are likely to encounter on a daily basis when implementing an IBM b-type SAN. The products that we describe in this book have more functionality than we can possibly cover in a single book. A storage area network (SAN) is a powerful infrastructure for consolidation, distance solutions, and data sharing. The quality applications that the IBM SAN portfolio provides can help you take full advantage of the benefits of the SAN. In this book, we cover the latest additions to the IBM b-type SAN family and show how you can implement them in an open systems environment. In particular, we focus on the Fibre Channel Protocol (FCP) environment. We address the key concepts that these products bring to the market and, in each case, we provide an overview of the functions that are essential to building a robust SAN environment.

### **A Guide to the IBM Clustered Network File System**

This IBM Redbooks publication supersedes both: IBM TotalStorage: Introduction to SAN Routing, SG24-7119-00 Implementing the IBM TotalStorage Multiprotocol Routers, SG24-7246-00 The rapid spread and adoption of production storage area networks (SANs) has fuelled the need for multiprotocol routers. The routers provide improved scalability, security, and manageability by enabling devices in separate SAN fabrics to communicate without merging fabrics into a single, large SAN fabric. This capability enables clients to initially deploy separate SAN solutions at the departmental and

data center levels. Then, clients can consolidate these separate solutions into large enterprise SAN solutions as their experience and requirements grow and change. Alternatively, multiprotocol routers can help to connect existing enterprise SANs for a variety of reasons. For instance, the introduction of Small Computer System Interface over IP (iSCSI) provides for the connection of low-end, low-cost hosts to enterprise SANs. The use of an Internet Protocol (IP) in the Fibre Channel (FC) environment provides for resource consolidation and disaster recovery planning over long distances. And the use of FC-FC routing services provides connectivity between two or more fabrics without having to merge them into a single SAN. This book targets storage network administrators, system designers, architects, and IT professionals who sell, design, or administer SANs. It introduces you to the products, concepts, and technology in the IBM System Storage SAN Routing portfolio. This book shows the features of each product and examples of how you can deploy and use them.

### **IBM Converged Switch B32**

This IBM® Redbooks® publication is a quickstart guide for implementing an IBM virtual disk system. We use the term IBM virtual disk system to collectively refer to IBM SAN Volume Controller (SVC), System Storage Productivity Center (SSPC), IBM mid range storage (DS3400 in this case), and IBM/Brocade SAN Switches. IBM System Storage SAN Volume Controller (SVC) is a virtualization appliance solution that maps virtualized volumes visible to hosts and applications to physical volumes on storage devices. The IBM virtualization technology improves management of information at the "block" level in a network, enabling applications and servers to share storage devices on a network. With IBM System Storage Productivity Center (SSPC)™, administrators can manage storage along with the other devices in the storage environment. This greatly simplifies management of even the most basic storage environments, and the awareness of environment helps to reduce accidental errors that can cause downtime. SSPC comes preloaded with IBM Tivoli Storage Productivity Center products, enables end-to-end disk management on single screen, and supports management of heterogeneous systems and devices.

### **The IBM PC AT Programmer's Guide**

CCNA Data Center DCICT 640-916 Official Cert Guide CCNA Data Center DCICT 640-916 Official Cert Guide from Cisco Press enables you to succeed on the exam the first time and is the only self-study resource approved by Cisco. A team of leading Cisco data center experts shares preparation hints and test-taking tips, helping you identify areas of weakness and improve both your conceptual knowledge and hands-on skills. This complete, official study package includes --A test-preparation routine proven to help you pass the exam --"Do I Know This Already?" quizzes, which enable you to decide how much time you need to spend on each section --Part-ending exercises, which help you drill on key concepts you must know thoroughly --The powerful Pearson IT Certification Practice Test software, complete with hundreds of well-reviewed, exam-realistic questions, customization options, and detailed performance reports --Study plan suggestions and templates to help you

organize and optimize your study time --A final preparation chapter that guides you through tools and resources to help you craft your review and test-taking strategies Well regarded for its level of detail, study plans, assessment features, and challenging review questions and exercises, this official study guide helps you master the concepts and techniques that ensure your exam success. The official study guide helps you master topics on the CCNA Data Center DCICT 640-916 exam, including --Cisco data center concepts: architectures, devices, layers, modular design, vPC, FabricPath, Cisco Nexus switches, and more --Data center unified fabric: FCoE, multihop, VIFs, FEX, and setup --Storage networking: concepts, targets, verification, connectivity, zoning, setup, and configuration --Data center virtualization: servers, devices, and Nexus 1000V, including setup and operations --Cisco Unified Computing: concepts, discovery, connectivity, setup, and UCSM --Data center network services: ACE load balancing, virtual context, HA, management, global/local solutions, and WAAS The CD-ROM contains more than 450 practice questions for the exam, memory table exercises and answer keys, and a study planner tool. Includes Exclusive Offer for 70% Off Premium Edition eBook and Practice Test Pearson IT Certification Practice Test minimum system requirements: Windows XP (SP3), Windows Vista (SP2), Windows 7, or Windows 8; Microsoft .NET Framework 4.0 Client; Pentium class 1GHz processor (or equivalent); 512 MB RAM; 650 MB disk space plus 50 MB for each downloaded practice exam; access to the Internet to register and download exam databases

### **IBM Storage Networking SAN64B-6 Switch**

The IBM® Distributed Virtual Switch 5000V (DVS 5000V) is a software-based network switching solution that is designed for use with the virtualized network resources in a VMware enhanced data center. It works with VMware vSphere and ESXi 5.0 and beyond to provide an IBM Networking OS management plane and advanced Layer 2 features in the control and data planes. It provides a large-scale, secure, and dynamic integrated virtual and physical environment for efficient virtual machine (VM) networking that is aware of server virtualization events, such as VMotion and Distributed Resource Scheduler (DRS). The DVS 5000V interoperates with any 802.1Qbg compliant physical switch to enable switching of local VM traffic in the hypervisor or in the upstream physical switch. Network administrators who are familiar with IBM System Networking switches can manage the DVS 5000V just like IBM physical switches by using advanced networking, troubleshooting, and management features to make the virtual switch more visible and easier to manage. This IBM Redbooks® publication helps the network and system administrator install, tailor, and quickly configure the IBM Distributed Virtual Switch 5000V (DVS 5000V) for a new or existing virtualization computing environment. It provides several practical applications of the numerous features of the DVS 5000V, including a step-by-step guide to deploying, configuring, maintaining, and troubleshooting the device. Administrators who are already familiar with the CLI interface of IBM System Networking switches will be comfortable with the DVS 5000V. Regardless of whether the reader has previous experience with IBM System Networking, this publication is designed to help you get the DVS 5000V functional quickly, and provide a conceptual explanation of how the DVS 5000V works in tandem with VMware.

## **IBM z/OS V1R11 Communications Server TCP/IP Implementation Volume 4: Security and Policy-Based Networking**

IBM® j-type data center solutions running Junos software (from Juniper Networks) provide operational agility and efficiency, dramatically simplifying the network and delivering savings. With this solution, a network design has fewer devices, interconnections, and network tiers. Beyond the cost advantages, the design offers the following key benefits: Reduces latency Simplifies device management Delivers significant power, cooling, and space savings Eliminates multiple system failure points Performs pervasive security The high-performance data center is built around IBM j-type e-series Ethernet switches, m-series routers, and s-series firewalls. This new family of powerful products helps to shape the next generation of dynamic infrastructure. IBM j-type e-series Ethernet switches meet escalating demands while controlling costs. IBM j-type m-series Ethernet routers are high-performance routers with powerful switching and security capabilities. This IBM Redbooks® publication targets IT professionals who sell, design, or administer IBM j-type networking solutions. It provides information about IBM j-type Ethernet switches and routers and includes the following topics: Introduction to Ethernet fundamentals and IBM j-type Ethernet switches and routers Initial hardware planning and configuration Other configuration topics including Virtual Chassis configuration, Layer 1, Layer 2, and Layer 3 configurations, and security features Network management features of Junos software and maintenance of the IBM j-type series hardware

## **Implementing IBM Software Defined Network for Virtual Environments**

This IBM® Redbooks® product guide describes the IBM Storage Networking SAN64B-6 switch. cloud infrastructures and growing flash-based storage environments by delivering market-leading Gen 6 Fibre Channel technology and capabilities. SAN64B-6 delivers unmatched 32/128 gigabits per second (Gbps) performance, industry-leading port density, and built-in instrumentation to accelerates data access, drive always-on business, and support data center consolidation in small to large-scale enterprise infrastructures.

## **Exploring IBM Server & Storage Technology**

Every organization today needs to manage the risk of exposing business-critical data, improve business continuity, and minimize the cost of managing IT security. Most all IT assets of an organization share a common network infrastructure. Therefore, the first line of defense is to establish proper network security. This security is a prerequisite for a logical set of technical countermeasures to protect from many different attack vectors that use the network to infiltrate the backbone of an organization. The IBM® Security Network Intrusion Prevention System (IPS) stops network-based threats before they can impact the business operations of an organization. Preemptive protection, which is protection that works ahead of a threat,

is available by means of a combination of line-speed performance, security intelligence, and a modular protection engine that enables security convergence. By consolidating network security demands for data security and protection for web applications, the IBM Security Network IPS serves as the security platform that can reduce the costs and complexity of deploying and managing point solutions. This IBM Redbooks® publication provides IT architects and security specialists a better understanding of the challenging topic of blocking network threats. This book highlights security convergence of IBM Virtual Patch® technology, data security, and Web Application Protection. In addition, this book explores the technical foundation of the IBM Security Network IPS. It explains how to set up, configure, and maintain proper network perimeter protection within a real-world business scenario.

### **Deployment Guide for InfoSphere Guardium**

This IBM® Redbooks® publication is a study guide for IBM Tivoli® Storage Productivity Center Version 4.1. It is targeted for professionals who want to obtain certification as an IBM Certified Deployment Professional - Tivoli Storage Productivity Center V4.1. This Certification, offered through the Professional Certification Program from IBM, is designed to validate the skills required of technical professionals who perform installation, configuration, administration, and problem determination of IBM Tivoli Storage Productivity Center V4.1, and demonstrates the features and functions of this product to the end user. This book provides a combination of theory and practical experience necessary for a general understanding of the subject matter. It also provides links to questions that can help in the evaluation of personal progress and provide familiarity with the types of questions that will be encountered in the exam. This book does not replace practical experience, nor is it designed to be a stand-alone guide for any subject. Instead, it is an effective tool that, when combined with educational activities and experience, can be a useful preparation guide for the exam.

### **Implementing IBM System Networking 10Gb Ethernet Switches**

This IBM® Redbooks product guide describes Fabric Vision technology. The use of virtualization, flash storage, and automation tools has allowed applications and services to be deployed faster while shattering performance barriers. The unprecedented number of application and service interactions has also increased the complexity, risk, and instability of mission-critical operations. As a result, IT organizations need flexible storage networks that can adapt to dynamic environments and performance requirements for high-density virtualization, flash storage, and cloud infrastructures. To achieve Service Level Agreement (SLA) objectives, IT administrators also need new tools that can help ensure non-stop operations, quickly identify potential points of congestion, and maximize application performance, while simplifying administration. Fabric Vision technology with IO Insight, an extension of Gen 6 Fibre Channel, provides outstanding insight and visibility across the storage network with powerful, integrated monitoring, management, and diagnostic tools that help

organizations to simplify monitoring, increase operational stability, and dramatically reduce costs.

### **IBM AT clone buyer's guide and handbook**

IBM's vision of the future of computing and how its evolving technologies, product lines, and services fit into that future are the subject of this broad look at the world's largest computer company. Discussing IBM's e-business strategy to leverage Internet technology, its new emphasis on IBM Global Services, and its fast-growing consulting business this overview. profiles of IBM's new eServer xSeries, pSeries, iSeries, and zSeries, showing how each fits into an e-business context. A companion web site accessible only to buyers of this book provides the latest news and additional resources related to IBM technology and product lines.

### **IBM Flex System p270 Compute Node Planning and Implementation Guide**

The IBM® Hardware Management Console (HMC) provides systems administrators a tool for planning, deploying, and managing IBM Power Systems™ servers. This IBM Redbooks® publication is designed for system administrators to use as a desk-side reference when managing partition-capable IBM Power Systems servers by using the HMC. The major functions that the HMC provides are Power Systems server hardware management and virtualization (partition) management. You can find information about virtualization management in the following documents: - A Practical Guide for Resource Monitoring and Control (RMC), SG24-6615 - IBM PowerVM Virtualization Introduction and Configuration, SG24-7940 - Implementing IBM Systems Director 6.1, SG24-7694 - Hardware Management Console V7 Handbook, SG24-7491 - IBM PowerVM Live Partition Mobility, SG24-7460 - IBM PowerVM Virtualization Managing and Monitoring, SG24-7590 - Converting Hardware Management Console (HMC) 7042-CR6 or 7042-CR7 Models to RAID1, REDP-4909 The following topics are described: - Plan to implement the HMC - Configure the HMC - Operate the HMC - Manage software levels on the HMC - Use service functions on the HMC - Update firmware of managed systems - Use IBM System Planning Tool deployments In addition, there is an explanation on how to use the new HMC graphical user interface and the new HMC commands that are available with HMC Version 7, Release 7, modification 60.

### **Fabric Resiliency Best Practices**

Getting acquainted with the system. An introduction to BASIC programming. Establishing the flow of control. The disk operating system. Disk access from BASIC. DOS version 2.0. String manipulations. Number crunching. Keyboard input programming. Putting text on the screen. Color graphics. Program debugging and testing. The parallel printer port. Serial asynchronous communication. Sound and music. BASIC version 2.0. Using the light pen and joysticks.

## **IBM Power Systems HMC Implementation and Usage Guide**

This IBM® Redbooks® publication shows how to integrate IBM Software Defined Network for Virtual Environments (IBM SDN VE) seamlessly within a new or existing data center. This book is aimed at pre- and post-sales support, targeting network administrators and other technical professionals that want to get an overview of this new and exciting technology, and see how it fits into the overall vision of a truly Software Defined Environment. It shows you all of the steps that are required to design, install, maintain, and troubleshoot the IBM SDN VE product. It also highlights specific, real-world examples that showcase the power and flexibility that IBM SDN VE has over traditional solutions with a legacy network infrastructure that is applied to virtual systems. This book assumes that you have a general familiarity with networking and virtualization. It does not assume an in-depth understanding of KVM or VMware. It is written for administrators who want to get a quick start with IBM SDN VE in their respective virtualized infrastructure, and to get some virtual machines up and running by using the rich features of the product in a short amount of time (days, not week, or months).

## **Certification Guide Series: Tivoli Storage Productivity Center V4.1**

Clearly presents what you need to know to take complete control of the PC AT. Provides extensive information about DOS 3.0, the Intel 80286, and the PC AT BIOS - to give you all the tools you need for proficient programming. Also included is a detailed background on the IBM family of personal computers, how they differ from the AT and the Intel 8086 CPU family.

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