

Ibm System X3650 User Guide

This IBM® Redbooks® publication provides deployment guidelines, workload estimates, and preferred practices for clients who want a proven IBM technology stack for virtualized VMware and Microsoft environments. The result is a Reference Architecture for Virtualized Environments (RAVE) that uses VMware vSphere or Microsoft Hypervisor, IBM System x® or IBM BladeCenter® server, IBM System Networking, and IBM System Storage® N series with Clustered Data ONTAP as a storage foundation. The reference architecture can be used as a foundation to create dynamic cloud solutions and make full use of underlying storage features and functions. This book provides a blueprint that illustrates how clients can create a virtualized infrastructure and storage cloud to help address current and future data storage business requirements. It explores the solutions that IBM offers to create a storage cloud solution addressing client needs. This book also shows how the Reference Architecture for Virtualized Environments and the extensive experience of IBM in cloud computing, services, proven technologies, and products support a Smart Storage Cloud solution that is designed for your storage optimization efforts. This book is for anyone who wants to learn how to successfully deploy a virtualized environment. It is also written for anyone who wants to understand how IBM addresses data storage and compute challenges with IBM System Storage N series solutions with IBM servers and networking solutions. This book is suitable for IT architects, business partners, IBM clients, storage solution integrators, and IBM sales representatives.

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.

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.

The IBM® Smart Analytics System is a fully-integrated and scalable data warehouse solution that combines software, server, and storage resources to offer optimal business intelligence and information management performance for enterprises. This IBM Redbooks® publication introduces the architecture and components of the IBM Smart Analytics System family. We describe the installation and configuration of the IBM Smart Analytics System and show how to manage the systems effectively to deliver an enterprise class service. This book explains the importance of integrating the IBM Smart Analytics System with the existing IT environment, as well as how to leverage investments in security, monitoring, and backup infrastructure. We discuss the monitoring tools for both operating systems and DB2®. Advance configuration, performance troubleshooting, and tuning techniques are also discussed. This book is targeted at the architects and specialists who need to know the concepts and the detailed instructions for a successful Smart Analytics System implementation and operation.

Continuing its commitment to developing and delivering industry-leading storage technologies, IBM® is introducing the IBM Real-time Compression Appliances for NAS, an innovative new storage offering that delivers essential storage efficiency technologies, combined with exceptional ease of use and performance. In an era when the amount of information, particularly in unstructured files, is exploding, but budgets for storing that information are stagnant, IBM Real-time Compression technology offers a powerful tool for better information management, protection, and access. IBM Real-time Compression can help slow the growth of storage

acquisition, reducing storage costs while simplifying both operations and management. It also enables organizations to keep more data available for use rather than storing it offsite or on harder-to-access tape, so they can support improved analytics and decision making. IBM Real-time Compression Appliances provide online storage optimization through real-time data compression, delivering dramatic cost reduction without performance degradation. This IBM Redbooks® publication is an easy-to-follow guide that describes how to design solutions successfully using IBM Real-time Compression Appliances (IBM RTCAs). It explains best practices for RTCA solution design, application integration, and practical RTCA use cases. This is a companion book to Introduction to IBM Real-time Compression Appliances, SG24-7953.

Note: This is a republication of IBM Spectrum Archive Enterprise Edition V1.2.6: Installation and Configuration Guide with new book number SG24-8445 to keep the content available on the Internet along with the recent publication IBM Spectrum Archive Enterprise Edition V1.3.0: Installation and Configuration Guide, SG24-8333. This IBM® Redbooks® publication helps you with the planning, installation, and configuration of the new IBM Spectrum™ Archive V1.2.6 for the IBM TS3310, IBM TS3500, IBM TS4300, and IBM TS4500 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 sixth 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 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. 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; yet, 72 percent 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 it already has. A member of the IBM® Storwize® family, IBM SAN Volume Controller (SVC) Data Platform is a storage virtualization system that enables a single point of control for storage resources to help support improved business application availability and

greater resource utilization. The objective is to manage storage resources in your IT infrastructure and to make sure they are used to the advantage of your business, and do it quickly, efficiently, and in real time, while avoiding increases in administrative costs. Virtualizing storage with SVC Data Platform helps make new and existing storage more effective. SVC Data Platform includes many functions traditionally deployed separately in disk systems. By including these in a virtualization system, SVC Data Platform standardizes functions across virtualized storage for greater flexibility and potentially lower costs. SVC Data Platform functions benefit all virtualized storage. For example, IBM Easy Tier® optimizes use of flash storage. And IBM Real-time Compression™ 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 SVC Data Platform also means that they are designed to operate smoothly together, reducing management effort. In this IBM Redbooks® publication, we discuss the latest features and functions of the SVC 2145-DH8 and software version 7.3, implementation, architectural improvements, and Easy Tier. InfoWorld is targeted to Senior IT professionals.

Content is segmented into Channels and Topic Centers. InfoWorld also celebrates people, companies, and projects.

This IBM® Redpaper™ publication is a comprehensive guide covering the IBM Power 710 (8231-E1D) and Power 730 (8231-E2D) servers that support IBM AIX®, IBM i, and Linux operating systems. This paper also describes the IBM PowerLinux™ 7R1 (8246-L1D and 8246-L1T) and the PowerLinux 7R2 (8246-L2D and 8246-L2T) servers that support the Linux operating system. The goal of this paper is to introduce the innovative Power 710, Power 730, PowerLinux 7R1, and PowerLinux offerings and their major functions: IBM POWER7+™ processor is available at frequencies of 3.6 GHz, 4.2 GHz, and 4.3 GHz. Larger IBM POWER7+ Level 3 cache provides greater bandwidth, capacity, and reliability. Integrated SAS/SATA controller for HDD, SSD, tape, and DVD supports built-in hardware RAID 0, 1, and 10. New IBM PowerVM® V2.2.2 features, such as 20 LPARs per core. Improved IBM Active Memory™ Expansion technology provides more usable memory than is physically installed in the system. Professionals who want to acquire a better understanding of IBM Power Systems™ products can benefit from reading this paper. This paper expands the current set of IBM Power Systems documentation by providing a desktop reference that

offers a detailed technical description of the Power 710 and Power 730 systems. This paper does not replace the latest marketing materials and configuration tools. It is intended as an additional source of information that, together with existing sources, can be used to enhance your knowledge of IBM server solutions.

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.

This IBM® Redbooks® publication is an IBM and Cisco collaboration that articulates how IBM and Cisco can bring the benefits of their respective companies to the modern data center. It documents the architectures, solutions, and benefits that can be achieved by implementing a data center based on IBM server, storage, and integrated systems, with the broader Cisco network. We describe how to

design a state-of-the-art data center and networking infrastructure combining Cisco and IBM solutions. The objective is to provide a reference guide for customers looking to build an infrastructure that is optimized for virtualization, is highly available, is interoperable, and is efficient in terms of power and space consumption. It will explain the technologies used to build the infrastructure, provide use cases, and give guidance on deployments.

The IBM® DB2® pureScale® feature offers clustering technology that helps deliver high availability and exceptional scalability transparent to applications. The DB2 pureScale feature helps you to meet your business needs around availability and scalability, and is also easy to configure and administer. This IBM Redbooks® publication addresses the DB2 pureScale feature that is available in IBM DB2 10.1 for Linux, UNIX, and Windows operating systems. It can help you build skills and deploy the DB2 pureScale feature. This book bundles all the information necessary for an in-depth analysis into the functions of the DB2 pureScale feature, including the actual hardware requirements. It includes validated step-by-step hardware and software installation instructions. In addition, this book provides detailed examples about how to work effectively with a DB2 pureScale cluster and how to plan and run an upgrade for all DB2 related components to DB2 10.1. This book is

intended for database administrators (DBAs) who use IBM DB2 10.1 for Linux, UNIX, and Windows operating systems who want to explore and get started with the DB2 pureScale feature.

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® SmartCloud™ Entry provides a fully integrated software stack for transforming a virtualized environment to a cloud environment. The intuitive self-service portal allows users to get up and running quickly. Built-in workload metering and additional tools enable tight controls and planning. The IBM Reference Configuration for VMware on IBM System x® with SmartCloud Entry provides an affordable, easy to deploy, private cloud architecture with configurations based on leading-edge technology from IBM, VMware, and Juniper Networks. The reference configuration is for midsized companies that need simpler and affordable IT solutions, without compromising on functionality. IBM and VMware, world leaders in enterprise-class IT solutions, are now bringing IT solutions tailored to the midmarket. This IBM Redpaper™ publication provides setup, configuration, and deployment details for the reference configuration and is intended for IT professionals who are familiar with software and hardware setup and configuration.

This IBM® Redbooks® publication provides both introductory information and technical details about the IBM System z® Personal Development Tool (IBM zPDT®), which produces a small System z environment suitable for application development. zPDT is a PC Linux application. When zPDT is installed (on Linux), normal System z operating systems (such as IBM z/OS®) can be run on it. zPDT provides the basic System z architecture and emulated IBM 3390 disk drives, 3270 interfaces, OSA interfaces, and so on. The systems that are discussed in this document are complex. They have elements of Linux (for the underlying PC

machine), IBM z/Architecture® (for the core zPDT elements), System z I/O functions (for emulated I/O devices), z/OS (the most common System z operating system), and various applications and subsystems under z/OS. The reader is assumed to be familiar with general concepts and terminology of System z hardware and software elements, and with basic PC Linux characteristics. This book provides the primary documentation for zPDT.

This IBM® Redpaper™ publication is a comprehensive guide covering the IBM Power 750 and Power 760 servers supporting IBM AIX®, IBM i, and Linux operating systems. The goal of this paper is to introduce the major innovative Power 750 and Power 760 offerings and their prominent functions: The IBM POWER7+™ processor is available at frequencies of 3.1 GHz, 3.4 GHz, 3.5 GHz, and 4.0 GHz. The larger IBM POWER7+ Level 3 cache provides greater bandwidth, capacity, and reliability. The newly introduced POWER7+ dual chip module (DCM). New 10GBase-T options for the Integrated Multifunction Card that provides two USB ports, one serial port, and four Ethernet connectors for a processor enclosure and does not require a PCI slot. New IBM PowerVM® V2.2.2 features, such as 20 LPARs per core. The improved IBM Active Memory™ Expansion technology provides more usable memory than is physically installed in the system. Professionals who want to acquire a better understanding of IBM Power Systems™ products should read this paper. This Redpaper expands the current set of IBM Power Systems documentation by providing a desktop reference that offers a detailed technical description of the 750 and 760 systems. This paper does not replace the latest marketing materials and configuration tools. It is intended as an additional source of information that, together with existing sources, may be used to enhance your knowledge of IBM server solutions. For additional reading: A Technote is

available that explains the performance architecture of this server. It is of interest to those migrating workloads from existing Power 750 servers. It can be found at: [Architecture of the IBM POWER7+ Technology-Based IBM Power 750 and IBM Power 760 Technote](#)

This IBM® Redbooks® publication describes the concepts, architecture, and implementation of the IBM System Storage® DS8700 storage subsystem. This book has reference information that will help you plan for, install, and configure the DS8700 and also discusses the architecture and components. The DS8700 is the most advanced model in the IBM System Storage DS8000® series. It includes IBM POWER6®-based controllers, with a dual 2-way or dual 4-way processor complex implementation. Its extended connectivity, with up to 128 Fibre Channel/FICON® ports for host connections, make it suitable for multiple server environments in both open systems and IBM System z® environments. If desired, the DS8700 can be integrated in an LDAP infrastructure. The DS8700 supports thin provisioning. Depending on your specific needs, the DS8700 storage subsystem can be equipped with SATA drives, FC drives, and Solid® State Drives (SSDs). The DS8700 can now automatically optimize the use of SSD drives through its no charge Easy Tier feature. The DS8700 also supports Full Disk Encryption (FDE) feature. Its switched Fibre Channel architecture, dual processor complex implementation, high availability design, and the advanced Point-in-Time Copy and Remote Mirror and Copy functions that incorporates make the DS8700 storage subsystem suitable for mission-critical business functions.

Lenovo System x® and BladeCenter® servers and Lenovo Flex System™ compute nodes help to deliver a dynamic infrastructure that provides leadership quality and service that you can trust. This document (simply known as xREF) is a

quick reference guide to the specifications of the currently available models of each System x and BladeCenter server. Each page can be used in a stand-alone format and provides a dense and comprehensive summary of the features of that particular server model. Links to the related Product Guide are also provided for more information. An easy-to-remember link you can use to share this guide:

<http://lenovopress.com/xref> Also available is xREF for Products Withdrawn Prior to 2012, a document that contains xREF sheets of System x, BladeCenter, and xSeries servers, and IntelliStation workstations that were withdrawn from marketing prior to 2012. Changes in the May 18 update: Added the Flex System Carrier-Grade Chassis See the Summary of changes in the document for a complete change history.

For more than 40 years, Computerworld has been the leading source of technology news and information for IT influencers worldwide. Computerworld's award-winning Web site (Computerworld.com), twice-monthly publication, focused conference series and custom research form the hub of the world's largest global IT media network.

This IBM® Redbooks® publication introduces the IBM Software Defined Environment (SDE) solution, which helps to optimize the entire computing infrastructure--compute, storage, and network resources--so that it can adapt to the type of work required. In today's environment, resources are assigned manually to workloads, but that happens automatically in a SDE. In an SDE, workloads are dynamically assigned to IT resources based on application characteristics, best-available resources, and service level policies so that they deliver continuous, dynamic optimization and reconfiguration to address infrastructure issues.

Underlying all of this are policy-based compliance checks and updates in a centrally managed environment. Readers get a

broad introduction to the new architecture. Think integration, automation, and optimization. Those are enablers of cloud delivery and analytics. SDE can accelerate business success by matching workloads and resources so that you have a responsive, adaptive environment. With the IBM Software Defined Environment, infrastructure is fully programmable to rapidly deploy workloads on optimal resources and to instantly respond to changing business demands. This information is intended for IBM sales representatives, IBM software architects, IBM Systems Technology Group brand specialists, distributors, resellers, and anyone who is developing or implementing SDE.

PCMag.com is a leading authority on technology, delivering Labs-based, independent reviews of the latest products and services. Our expert industry analysis and practical solutions help you make better buying decisions and get more from technology.

This IBM® Redbooks® publication consolidates, in one document, detailed descriptions of the hardware configurations and options offered as part of the IBM System Storage DS5000 families of products. This edition covers updates and additional functions available with the IBM System Storage DS® Storage Manager Version 10.77 (firmware level 7.77). This book presents the concepts and functions used in planning and managing the storage servers, such as multipathing and path failover. The book offers a step-by-step guide to using the Storage Manager to create arrays, logical drives, and other basic (as well as advanced) management tasks. This publication also contains practical information about diagnostics and troubleshooting, and includes practical examples of how to use scripts and the command-line interface. This publication is intended for customers, IBM Business Partners, and IBM technical professionals who want to learn more about the capabilities

and advanced functions of the DS5000 series of storage servers with Storage Manager Software V10.77. It also targets those who have a DS5000 storage subsystem and need detailed advice about how to configure it. This book is designed specifically to address the hardware features and configuration of the IBM System Storage DS5000 family and can be used in conjunction with the following IBM Redbooks publications: IBM System Storage DS5000 Series Implementation and Best Practices Guide, SG24-8024 IBM System Storage DS Storage Manager Copy Services Guide, SG24-7822

This IBM® Redpaper™ publication provides a broad understanding of IBM Spectrum Virtualize™ software only and how it fits into to the IBM SAN Volume Control and IBM Storwize® families. It also provides use cases for cloud, Cloud Service Provider (CSP), and Managed Service Provider (MSP) implementations. This publication helps storage and networking administrators install, tailor, and configure IBM Spectrum Virtualize software only. It also provides a detailed description of supported hardware and troubleshooting tips. In April 2017, this paper was updated to include information about Version 7.8.1 and Supermicro SYS-2028U-TRTP+ server implementation.

Server virtualization technologies are becoming more popular to help efficiently utilize resources by consolidating servers. IBM®, the first company that developed and made available the virtual technology in 1966, offers advanced, powerful, reliable, and cost-saving virtualization technologies in various hardware and software products including DB2® for Linux, UNIX, and Windows. This IBM Redbooks® publication describes using IBM DB2 9 with server virtualization. We start with a general overview of virtualization and describe specific server virtualization technologies to highlight how the server virtualization technologies have been implemented. With this

introduction anyone new to virtualization will have a better understanding of server virtualization and the industry server virtualization technologies available in the market. Following the virtualization concept, we describe in detail the setup, configuration, and managing of DB2 with three leading server virtualization technologies: IBM Power Systems™ with PowerVM™ VMware Hyper-V We discuss the virtual machine setup with DB2 in mind to help IT support understand the effective ways of setting up a virtual environment specific for DB2. We explain the architecture and components of these three server virtualization technologies to allow DBAs to understand how a database environment using DB2 can benefit from using the server virtualization technologies. In addition, we discuss the DB2 features and functions that can take advantage of using server virtualization. These features are put into practice when describing how to set up DB2 with the three virtualization technologies discussed in this book. This book also includes a list of best practices from the various tests performed while using these virtualization technologies. These best practices can be used as a guideline or a reference when setting up DB2 using these virtualization technologies.

The IBM® Linear Tape File System™ (LTFS) is the first file system that works along with Linear Tape-Open (LTO) tape technology to set a new standard for ease of use and portability for open systems tape storage. In 2011, LTFS won an Engineering Emmy Award for Innovation from the Academy of Television Arts & Sciences. This IBM Redbooks® publication helps you install, tailor, and configure the IBM Spectrum™ Archive Single Drive Edition (SDE) and the IBM Spectrum Archive™ Library Edition (LE) products. LTFS is a file system that was originally implemented on dual-partition linear tape (IBM LTO Ultrium 5 tape drives (LTO-5) and IBM TS1140 tape drives). Now IBM Spectrum Archive

SDE and LE support IBM LTO Ultrium 8, 7, 6, or 5 tape drives, and IBM TS1155, IBM TS1150, and IBM TS1140 tape drives. IBM Spectrum Archive LE supports the IBM TS4500 tape library, IBM TS3500 tape library, IBM TS3310 tape library, IBM TS3200 tape library express, IBM TS3100 tape library express, and IBM TS2900 tape autoloader express. IBM Spectrum Archive makes tape look and work like any removable media, such as a USB drive. Files and directories appear on the desktop as a directory listing. It is now simple to drag files to and from tape. Any application that is written to use disk files works with the same files on tape. IBM Spectrum Archive SDE supports stand-alone drives only. IBM Spectrum Archive LE supports tape libraries. IBM Spectrum Archive LE presents each cartridge in the library as a subdirectory in the LTFS file system. With IBM Spectrum Archive LE, you can list the contents and search all of the volumes in the library without mounting the volumes by using an in-memory index. This publication is intended for anyone who wants to understand more about IBM Linear Tape System products and their implementation. This book is suitable for IBM clients, IBM Business Partners, IBM specialist sales representatives, and technical specialists. Continuing its commitment to developing and delivering industry-leading storage technologies, IBM is introducing the IBM Real-time Compression Appliance for NAS, an innovative new storage offering that delivers essential storage efficiency technologies, combined with exceptional ease of use and performance. In an era when the amount of information, particularly in unstructured files, is exploding, but budgets for storing that information are stagnant, IBM Real-time Compression technology offers a powerful tool for better information management, protection and access. IBM Real-time Compression can help slow the growth of storage acquisition, reducing storage costs while simplifying both

operations and management. It also enables organizations to keep more data available for use rather than storing it offsite or on tape that is more difficult to access, so they can support improved analytics and decision-making. IBM Real-time Compression Appliance provides online storage optimization through real-time data compression, delivering dramatic cost reduction without performance degradation. This IBM Redbooks publication is for system administrators and IT architects. It describes the enhancements made in version 4.1 of the Real-time Compression Appliance as compared to previous releases. This book is a companion to the publication Introduction to IBM Real-time Compression Appliances, SG24-7953.

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