

## Ibm Hmc V7 Manual

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### **IBM Db2 Analytics Accelerator V7 High Availability and Disaster Recovery**

This IBM® Redbooks® publication provides best practices for planning, installing, maintaining, and monitoring the IBM PowerVM® Enterprise Edition virtualization features on IBM POWER7® processor technology-based servers. PowerVM is a combination of hardware, PowerVM Hypervisor, and software, which includes other virtualization features, such as the Virtual I/O Server. This publication is intended for experienced IT specialists and IT architects who want to learn about PowerVM best practices, and focuses on the following topics: Planning and general best practices Installation, migration, and configuration Administration and maintenance Storage and networking Performance monitoring Security PowerVM

advanced features This publication is written by a group of seven PowerVM experts from different countries around the world. These experts came together to bring their broad IT skills, depth of knowledge, and experiences from thousands of installations and configurations in different IBM client sites.

### **Introducing the IBM DS8882F Rack Mounted Storage System**

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 an extension of IBM Power Systems HMC Implementation and Usage Guide, SG24-7491. It explains the new features of IBM Power Systems Hardware Management Console Version V8.8.1.0. The major function 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: IBM PowerVM Virtualization Managing and Monitoring, SG24-7590 IBM PowerVM Virtualization Introduction and Configuration, SG24-7940 IBM PowerVM Enhancements What is New in 2013, SG24-8198 IBM Power Systems SR-IOV: Technical Overview and Introduction, REDP-5065 The following new features of HMC V8.8.1.0 are described: HMC V8.8.1.0 enhancements System and Partition Templates HMC and IBM PowerVM® Simplification Enhancements Manage Partition Enhancement Performance and Capacity Monitoring HMC V8.8.1.0 upgrade changes

### **The Bios Companion**

This IBM Redbooks publication gives a broad understanding of the new System i5 architecture as it applies to logically partitioned System i5 systems. This functionality is delivered through a new configuration and management interface called the Hardware Management Console (HMC). Reading this book will help you design your server partition scheme from scratch. We also discuss the requirements to create a solution to migrate from existing iSeries servers with and without logical partitions. This book will help you install, tailor, and configure logical partitions (LPARs) on System i5 systems. You will understand how to set up the server and HMC via the Guided Setup Wizard. We also cover the creation of multiple i5/OS partitions, where the OS could be IBM i5/OS, AIX, or Linux.

### **IBM PowerHA SystemMirror V7.2.3 for IBM AIX and V7.22 for Linux**

IBM® Db2® Analytics Accelerator is a workload optimized appliance add-on to IBM DB2® for IBM z/OS® that enables the integration of analytic insights into operational processes to drive business critical analytics and exceptional business value. Together, the Db2 Analytics Accelerator and DB2 for z/OS form an integrated hybrid environment that can run transaction processing, complex

analytical, and reporting workloads concurrently and efficiently. With IBM DB2 Analytics Accelerator for z/OS V7, the following flexible deployment options are introduced: Accelerator on IBM Integrated Analytics System (IIAS): Deployment on pre-configured hardware and software Accelerator on IBM Z®: Deployment within an IBM Secure Service Container LPAR For using the accelerator for business-critical environments, the need arose to integrate the accelerator into High Availability (HA) architectures and Disaster Recovery (DR) processes. This IBM Redpaper™ publication focuses on different integration aspects of both deployment options of the IBM Db2 Analytics Accelerator into HA and DR environments. It also shares best practices to provide wanted Recovery Time Objectives (RTO) and Recovery Point Objectives (RPO). HA systems often are a requirement in business-critical environments and can be implemented by redundant, independent components. A failure of one of these components is detected automatically and their tasks are taken over by another component. Depending on business requirements, a system can be implemented in a way that users do not notice outages (continuous availability), or in a major disaster, users notice an outage and systems resume services after a defined period, potentially with loss of data from previous work. IBM Z was strong for decades regarding HA and DR. By design, storage and operating systems are implemented in a way to support enhanced availability requirements. IBM Parallel Sysplex® and IBM Globally Dispersed Parallel Sysplex (IBM GDPS®) offer a unique architecture to support various degrees of automated failover and availability concepts. This IBM

Redpaper publication shows how IBM Db2 Analytics Accelerator V7 can easily integrate into or complement existing IBM Z topologies for HA and DR. If you are using IBM Db2 Analytics Accelerator V5.1 or lower, see IBM Db2 Analytics Accelerator: High Availability and Disaster Recovery, REDP-5104.

### **Security on the IBM Mainframe**

This IBM® Redbooks® publication addresses topics to help answer customers' complex high availability requirements to help maximize systems availability and resources, and provide documentation to transfer the how-to-skills to the worldwide sales and support teams. This publication helps strengthen the position of the IBM PowerHA® SystemMirror® solution with a well-defined and documented deployment models within an IBM Power Systems™ virtualized environment, providing customers a planned foundation for business resilient infrastructure solutions. This book describes documentation, and other resources available to help the technical teams provide business resilience solutions and support with the IBM PowerHA SystemMirror Standard and Enterprise Editions on IBM Power Systems. This publication targets technical professionals (consultants, technical support staff, IT Architects, and IT Specialists) responsible for providing high availability solutions and support with IBM PowerHA SystemMirror Standard and Enterprise Editions on IBM Power Systems.

## **IBM Workload Deployer: Pattern-based Application and Middleware Deployments in a Private Cloud**

This book starts with background concerning three-dimensional integration - including their low energy consumption and high speed image processing - and then proceeds to how to construct them and which materials to use in particular situations. The book covers numerous applications, including next generation smart phones, driving assistance systems, capsule endoscopes, homing missiles, and many others. The book concludes with recent progress and developments in three dimensional packaging, as well as future prospects.

## **Hacking Roomba**

The IBM® Hardware Management Console (HMC) provides to systems administrators a tool for planning, deploying, and managing IBM Power Systems™ servers. This IBM Redbooks® publication is an extension of IBM Power Systems HMC Implementation and Usage Guide, SG24-7491 and also merges updated information from IBM Power Systems Hardware Management Console: Version 8 Release 8.1.0 Enhancements, SG24-8232. It explains the new features of IBM Power Systems Hardware Management Console Version V8.8.1.0 through V8.8.4.0. The major functions that the HMC provides are Power Systems server hardware

management and virtualization (partition) management. Further information about virtualization management is in the following publications: IBM PowerVM Virtualization Managing and Monitoring, SG24-7590 IBM PowerVM Virtualization Introduction and Configuration, SG24-7940 IBM PowerVM Enhancements What is New in 2013, SG24-8198 IBM Power Systems SR-IOV: Technical Overview and Introduction, REDP-5065 The following features of HMC V8.8.1.0 through HMC V8.8.4.0 are described in this book: HMC V8.8.1.0 enhancements HMC V8.8.4.0 enhancements System and Partition Templates HMC and IBM PowerVM® Simplification Enhancement Manage Partition Enhancement Performance and Capacity Monitoring HMC V8.8.4.0 upgrade changes

### **IBM PowerVM Best Practices**

Learn to program SAS by example! Learning SAS by Example, A Programmer's Guide, Second Edition, teaches SAS programming from very basic concepts to more advanced topics. Because most programmers prefer examples rather than reference-type syntax, this book uses short examples to explain each topic. The second edition has brought this classic book on SAS programming up to the latest SAS version, with new chapters that cover topics such as PROC SGPLOT and Perl regular expressions. This book belongs on the shelf (or e-book reader) of anyone who programs in SAS, from those with little programming experience who want to learn SAS to intermediate and even advanced SAS programmers who want to learn

new techniques or identify new ways to accomplish existing tasks. In an instructive and conversational tone, author Ron Cody clearly explains each programming technique and then illustrates it with one or more real-life examples, followed by a detailed description of how the program works. The text is divided into four major sections: Getting Started, DATA Step Processing, Presenting and Summarizing Your Data, and Advanced Topics. Subjects addressed include Reading data from external sources Learning details of DATA step programming Subsetting and combining SAS data sets Understanding SAS functions and working with arrays Creating reports with PROC REPORT and PROC TABULATE Getting started with the SAS macro language Leveraging PROC SQL Generating high-quality graphics Using advanced features of user-defined formats and informats Restructuring SAS data sets Working with multiple observations per subject Getting started with Perl regular expressions You can test your knowledge and hone your skills by solving the problems at the end of each chapter.

### **Performance Optimization and Tuning Techniques for IBM Power Systems Processors Including IBM POWER8**

IBM® Geographically Dispersed Parallel Sysplex™ (GDPS®) is a collection of several offerings, each addressing a different set of IT resiliency goals. It can be tailored to meet the recovery point objective (RPO), which is how much data can

you are willing to lose or recreate, and the recovery time objective (RTO), which identifies how long can you afford to be without your systems for your business from the initial outage to having your critical business processes available to users. Each offering uses a combination of server and storage hardware or software-based replication, and automation and clustering software technologies. This IBM Redbooks® publication presents an overview of the IBM GDPS active/active (GDPS/AA) offering and the role it plays in delivering a business IT resilience solution.

### **M2M**

This IBM® Redpaper™ publication describes the adapter-based virtualization capabilities that are being deployed in high-end IBM POWER7+™ processor-based servers. Peripheral Component Interconnect Express (PCIe) single root I/O virtualization (SR-IOV) is a virtualization technology on IBM Power Systems servers. SR-IOV allows multiple logical partitions (LPARs) to share a PCIe adapter with little or no run time involvement of a hypervisor or other virtualization intermediary. SR-IOV does not replace the existing virtualization capabilities that are offered as part of the IBM PowerVM® offerings. Rather, SR-IOV compliments them with additional capabilities. This paper describes many aspects of the SR-IOV technology, including: A comparison of SR-IOV with standard virtualization technology Overall benefits of SR-IOV Architectural overview of SR-IOV Planning requirements SR-IOV

deployment models that use standard I/O virtualization  
Configuring the adapter for dedicated or shared modes  
Tips for maintaining and troubleshooting your system  
Scenarios for configuring your system  
This paper is directed to clients, IBM Business Partners, and system administrators who are involved with planning, deploying, configuring, and maintaining key virtualization technologies.

### **IBM Power 550 Technical Overview**

IBM® Systems Director is a platform management foundation that streamlines the way that physical and virtual systems are managed. Using industry standards, IBM Systems Director supports multiple operating systems and virtualization technologies. This paper provides guidance and preferred practices about how to install and configure IBM Systems Director Version 6.3. Also, installation guidance, fundamental topics, such as discovery and inventory, and more advanced topics, such as troubleshooting and automation, are covered. This paper is meant to be a partner to the comprehensive documentation in the IBM Systems Director Information Center. This paper is aimed at IT specialists who are planning to install and configure IBM Systems Director on Microsoft Windows, Linux, or IBM AIX®.

### **Three-Dimensional Integration of Semiconductors**

This IBM Redbooks publication discusses z/VM and Linux operations from the perspective of the z/OS programmer or system programmer. Although other books have been written about many of these topics, this book gives enough information about each topic to describe z/VM and Linux on IBM System z operations to somebody who is new to both environments. This book is intended for z/OS programmers and system programmers who are transitioning to the z/VM and Linux on System z environments and who want a translation guide for assistance. We base this book on our experiences using System z10 Enterprise Edition, z/VM version 5.3 RSU 0701, and Novell SUSE Linux Enterprise Server (SLES) 10 on System z.

### **IBM Power Systems LC921 and LC922: Technical Overview and Introduction**

IBM® PowerVM® virtualization technology is a combination of hardware and software that supports and manages the virtual environments on POWER5-, POWER5+, IBM POWER6®, and IBM POWER7®-based systems. PowerVM is available on IBM Power Systems™, and IBM BladeCenter® servers as optional Editions, and is supported by the IBM AIX®, IBM i, and Linux operating systems. You can use this set of comprehensive systems technologies and services to aggregate and manage resources by using a consolidated, logical view. Deploying

PowerVM virtualization and IBM Power Systems offers you the following benefits: Lower energy costs through server consolidation Reduced cost of your existing infrastructure Better management of the growth, complexity, and risk of your infrastructure This IBM Redbooks® publication is an extension of IBM PowerVM Virtualization Introduction and Configuration, SG24-7940. It provides an organized view of best practices for managing and monitoring your PowerVM environment concerning virtualized resources managed by the Virtual I/O Server.

### **Applied Reconfigurable Computing**

This IBM® Redbooks® publication provides advice and guidance for IBM z/OS® Version 1, Release 10 and subsystem system programmers. z/OS is an IBM flagship operating system for enterprise class applications, particularly those with high availability requirements. But, as with every operating system, z/OS requires planned IPLs from time to time. This book also provides you with easily accessible and usable information about ways to improve your mean time to recovery (MTTR) by helping you achieve the following objectives: - Minimize the application down time that might be associated with planned system outages. - Identify the most effective way to reduce MTTR for any time that you have a system IPL. - Identify factors that are under your control and that can make a worthwhile difference to the startup or shutdown time of your systems.

## **IBM GDPS Active/Active Overview and Planning**

Managing IT systems is difficult. Virtualization brings numerous benefits to the datacenter and system administrators. However, it also creates a new set of choices. More choice implies more decisions, and thus an increased management responsibility. Furthermore, the move toward cloud computing, with a service-based acquisition and delivery model, requires that datacenter managers take a holistic view of the resources that they manage and the actors that access the data center. IBM® Service Delivery Manager addresses this problem domain. Delivered as a set of appliances, it automates provisioning, deprovisioning, metering, and management of an IT platform, and the services it provides. It addresses the needs of both IT management and service users. This IBM Redbooks® publication is intended for technical professionals who want to understand and deploy IBM ISDM Cloud on a Power platform.

## **IBM DS8900F Architecture and Implementation Release 9.1**

This IBM® Redbooks® publication can help you install, tailor, and configure the new IBM PowerHA® Version 7.1.3, and understand new and improved features such as migrations, cluster administration, and advanced topics like configuring in a virtualized environment including workload partitions (WPARs). With this book,

you can gain a broad understanding of the IBM PowerHA SystemMirror® architecture. If you plan to install, migrate, or administer a high availability cluster, this book is right for you. This book can help IBM AIX® professionals who seek a comprehensive and task-oriented guide for developing the knowledge and skills required for PowerHA cluster design, implementation, and daily system administration. It provides a combination of theory and practical experience. This book is targeted toward technical professionals (consultants, technical support staff, IT architects, and IT specialists) who are responsible for providing high availability solutions and support with the IBM PowerHA SystemMirror Standard on IBM POWER® systems.

### **IBM PowerHA SystemMirror V7.2 for IBM AIX Updates**

To meet today's complex and ever-changing business demands, you need a solid foundation of compute, storage, networking, and software resources. This system must be simple to deploy and be able to quickly and automatically adapt to changing conditions. You also need to be able to take advantage of broad expertise and proven guidelines in systems management, applications, industry solutions, and more. IBM® PureFlex® System combines no-compromise system designs along with built-in expertise and integrates them into complete, optimized scalable solutions. With IBM Flex System® Manager, multiple solution components that include compute nodes, network and storage infrastructures, storage systems,

and heterogeneous virtualization environments can be managed from a single panel. This IBM Redbooks® publication introduces IBM PureFlex System and IBM Flex System and their management devices and appliances. It provides implementation guidelines for managing Linux kernel-based virtual machine (KVM), IBM PowerVM®, VMware vSphere, and Microsoft Hyper-V virtualization environments. This book is intended for the IT community of clients, IBM Business Partners, and IBM employees who are interested in planning and implementing systems management of the IBM PureFlex System.

### **IBM Power Systems Hardware Management Console: Version 8 Release 8.1.0 Enhancements**

The IBM® i operation system (formerly IBM i5/OS®) is considered one of the most secure systems in the industry. From the beginning, security was designed as an integral part of the system. The System i® platform provides a rich set of security features and services that pertain to the goals of authentication, authorization, integrity, confidentiality, and auditing. However, if an IBM Client does not know that a service, such as a virtual private network (VPN) or hardware cryptographic support, exists on the system, it will not use it. In addition, there are more and more security auditors and consultants who are in charge of implementing corporate security policies in an organization. In many cases, they are not familiar

with the IBM i operating system, but must understand the security services that are available. This IBM Redbooks® publication guides you through the broad range of native security features that are available within IBM i Version and release level 6.1. This book is intended for security auditors and consultants, IBM System Specialists, Business Partners, and clients to help you answer first-level questions concerning the security features that are available under IBM. The focus in this publication is the integration of IBM 6.1 enhancements into the range of security facilities available within IBM i up through Version release level 6.1. IBM i 6.1 security enhancements include: - Extended IBM i password rules and closer affinity between normal user IBM i operating system user profiles and IBM service tools user profiles - Encrypted disk data within a user Auxiliary Storage Pool (ASP) - Tape data save and restore encryption under control of the Backup Recovery and Media Services for i5/OS (BRMS) product, 5761-BR1 - Networking security enhancements including additional control of Secure Sockets Layer (SSL) encryption rules and greatly expanded IP intrusion detection protection and actions. DB2® for i5/OS built-in column encryption expanded to include support of the Advanced Encryption Standard (AES) encryption algorithm to the already available Rivest Cipher 2 (RC2) and Triple DES (Data Encryption Standard) (TDES) encryption algorithms. The IBM i V5R4 level IBM Redbooks publication IBM System i Security Guide for IBM i5/OS Version 5 Release 4, SG24-6668, remains available.

### **Logical Partitions on System i5: A Guide to Planning and**

## **Configuring LPAR with HMC on System i**

The IBM® System Storage® Solutions Handbook helps you solve your current and future data storage business requirements. It helps you achieve enhanced storage efficiency by design to allow managed cost, capacity of growth, greater mobility, and stronger control over storage performance and management. It describes the most current IBM storage products, including the IBM Spectrum™ family, IBM FlashSystem®, disk, and tape, as well as virtualized solutions such as IBM Storage Cloud. This IBM Redbooks® publication provides overviews and information about the most current IBM System Storage products. It shows how IBM delivers the right mix of products for nearly every aspect of business continuance and business efficiency. IBM storage products can help you store, safeguard, retrieve, and share your data. This book is intended as a reference for basic and comprehensive information about the IBM Storage products portfolio. It provides a starting point for establishing your own enterprise storage environment. This book describes the IBM Storage products as of March, 2016.

## **Learning SAS by Example**

## **Security Guide for IBM i V6.1**

This book constitutes the refereed proceedings of the 13th International Symposium on Applied Reconfigurable Computing, ARC 2017, held in Delft, The Netherlands, in April 2017. The 17 full papers and 11 short papers presented in this volume were carefully reviewed and selected from 49 submissions. They are organized in topical sections on adaptive architectures, embedded computing and security, simulation and synthesis, design space exploration, fault tolerance, FPGA-based designs, neural networks, and languages and estimation techniques.

### **IBM PowerHA SystemMirror for AIX Cookbook**

The ABCs of IBM® z/OS® System Programming is a 13-volume collection that provides an introduction to the z/OS operating system and the hardware architecture. Whether you are a beginner or an experienced system programmer, the ABCs collection provides the information you need to start your research into z/OS and related subjects. If you would like to become more familiar with z/OS in your current environment, or if you are evaluating platforms to consolidate your e-business applications, the ABCs collection serves as a powerful technical tool. . This IBM Redbooks® publication, Volume 8, shows you how to: - Adopt a systematic and thorough approach to dealing with problems and identifying the different types of problems - Determine where to look for diagnostic information and how to obtain it - Interpret and analyze the diagnostic data collected - Escalate problems to the IBM Support Center when necessary - Collect and analyze

diagnostic data—a dynamic and complex process - Identify and document problems, collect and analyze pertinent diagnostic data and obtain help as needed, to speed you on your way to problem resolution The content of the volumes is as follows Volume 1: Introduction to z/OS and storage concepts, TSO/E, ISPF, JCL, SDSF, and z/OS delivery and installation Volume 2: z/OS implementation and daily maintenance, defining subsystems, JES2 and JES3, LPA, LNKLST, authorized libraries, SMP/E, Language Environment® Volume 3: Introduction to DFSMS, data set basics storage management hardware and software, catalogs, and DFSMSStvs Volume 4: Communication Server, TCP/IP, and VTAM® Volume 5: Base and Parallel Sysplex® , System Logger, Resource Recovery Services (RRS), global resource serialization (GRS), z/OS system operations, automatic restart management (ARM), Geographically Dispersed Parallel Sysplex™ (GDPS® ) Volume 6: Introduction to security, RACF, Digital certificates and PKI, Kerberos, cryptography and z990 integrated cryptography, zSeries® firewall technologies, LDAP, and Enterprise identity mapping (EIM) Volume 7: Printing in a z/OS environment, Infoprint® Server and Infoprint Central Volume 8: An introduction to z/OS problem diagnosis Volume 9: z/OS UNIX System Services Volume 10: Introduction to z/Architecture™ , zSeries processor design, zSeries connectivity, LPAR concepts, HCD, and HMC Volume 11: Capacity planning, performance management, WLM, RMFTM , and SMF

## **Cloud Computing Infrastructure on IBM Power Systems:**

## **Getting started with ISDM**

### **Delivering Continuity and Extreme Capacity with the IBM DB2 pureScale Feature**

M2M is an acronym for Machine to Machine, and the birth of a fourth generation of computing. It combines communications, computer and power technologies to enable remote human and machine interaction with physical, chemical, and biological systems and processes.

### **IBM PowerVM Virtualization Managing and Monitoring**

This IBM® Redpaper™ publication is a comprehensive guide that covers the IBM Power Systems™ LC921 and LC922 (9006-12P and 9006-22P) servers that use the current IBM POWER9™ processor-based technology and supports Linux operating systems (OSes). The objective of this paper is to introduce the offerings and their capacities and available features. These new Linux scale-out systems provide differentiated performance, scalability, and low acquisition cost, and include the following features: Superior throughput and performance for high-value Linux workloads. Low acquisition cost through system optimization (industry-

standard memory and industry-standard three-year warranty). Rich I/O options in the system unit. There are 12 large form factor (LFF)/small form factor (SFF) bays for 12 SAS/SATA hard disk drives (HDDs) or solid-state drives (SSDs), and four bays that are available for Non-Volatile Memory Express (NVMe) Gen3 adapters. Includes Trusted Platform Module (TPM) 2.0 Nuvoton NPCT650ABAWX through I2C (for secure boot and trusted boot). Integrated MicroSemi PM8069 SAS/SATA 16-port Internal Storage Controller Peripheral Component Interconnect Express (PCIe) 3.0 x8 with RAID 0, 1, 5, and 10 support (no write cache). Integrated Intel XL710 Quad Port 10 GBase-T PCIe 3.0 x8 UIO built-in local area network (LAN) (one shared management port). Dedicated 1 Gb Intelligent Platform Management Interface (IPMI) port. This publication is for professionals who want to acquire a better understanding of IBM Power Systems products. The intended audience includes: Clients Sales and marketing professionals Technical support professionals IBM Business Partners Independent software vendors (ISVs)

### **IBM PowerVC Version 1.3.2 Introduction and Configuration**

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 a 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.

### **ABCs of z/OS System Programming**

This IBM® Redpaper™ presents and positions the DS8882F. The DS8882F adds a modular rack-mountable enterprise storage system to the DS8880 family of all-flash enterprise storage systems. The modular system can be integrated into 16U contiguous space of an existing IBM z14™ Model ZR1 (z14 Model ZR1), IBM LinuxONE™ Rockhopper II (z14 Model LR1), or other standard 19-inch wide rack. The DS8882F allows you to take advantage of the performance boost of DS8880 all-flash enterprise systems and advanced features while limiting datacenter footprint and power infrastructure requirements.

## **IBM Systems Director 6.3 Best Practices: Installation and Configuration**

This IBM® Redbooks® publication provides a technical overview of the features, functions, and enhancements available in IBM i 7.1, including all the Technology Refresh (TR) levels from TR1 to TR7. It provides a summary and brief explanation of the many capabilities and functions in the operating system. It also describes many of the licensed programs and application development tools that are associated with IBM i. The information provided in this book is useful for clients, IBM Business Partners, and IBM service professionals who are involved with planning, supporting, upgrading, and implementing IBM i 7.1 solutions.

## **Implementing the IBM Storwize V7000 Gen2**

This IBM® Redpaper™ is a comprehensive guide covering the Power 550 server. The goal of this paper is to introduce the innovative Power 550. It introduces major hardware offerings and discusses their prominent functions, including:

- o The POWER6 processor available at frequencies of 3.5 GHz, 4.2 GHz, and 5.0 GHz.
- o The specialized POWER6 DDR2 memory that provides greater bandwidth, capacity, and reliability.
- o The 1 Gb or 10 Gb Integrated Virtual Ethernet adapter that brings native hardware virtualization to this server
- o EnergyScale technology that

provides features such as power trending, power-saving, capping of power, and thermal measurement o PowerVM Live Partition Mobility o Mainframe continuous availability brought to the UNIX environment This Redpaper expands the current set of IBM System p documentation by providing a desktop reference that offers a detailed technical description of the 550 system. This Redpaper does not replace the latest marketing materials and 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.

### **System Programmer's Guide to Workload Manager**

### **z/VM and Linux Operations for z/OS System Programmers**

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 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 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.

## Hardware Management Console V7 Handbook

IBM® Power Virtualization Center (IBM® PowerVCTM) is an advanced, enterprise virtualization management offering for IBM Power Systems™. This IBM Redbooks® publication introduces IBM PowerVC and helps you understand its functions, planning, installation, and setup. IBM PowerVC Version 1.3.2 supports both large and small deployments, either by managing IBM PowerVM® that is controlled by the Hardware Management Console (HMC) by IBM PowerVM NovaLink, or by managing PowerKVM directly. With this capability, IBM PowerVC can manage IBM AIX®, IBM i, and Linux workloads that run on IBM POWER® hardware. IBM PowerVC is available as a Standard Edition, or as a Cloud PowerVC Manager edition. IBM PowerVC includes the following features and benefits: Virtual image capture, deployment, and management Policy-based virtual machine (VM) placement to improve use Management of real-time optimization and VM resilience to increase productivity VM Mobility with placement policies to reduce the burden on IT staff in a simple-to-install and easy-to-use graphical user interface (GUI) Role-based security policies to ensure a secure environment for common tasks The ability to enable an administrator to enable Dynamic Resource Optimization on a schedule IBM Cloud PowerVC Manager includes all of the IBM PowerVC Standard Edition features and adds: A Self-service portal that allows the provisioning of new VMs without direct system administrator intervention. There is an option for policy approvals for the requests that are received from the self-service portal. Pre-built

deploy templates that are set up by the cloud administrator that simplify the deployment of VMs by the cloud user. Cloud management policies that simplify management of cloud deployments. Metering data that can be used for chargeback. This publication is for experienced users of IBM PowerVM and other virtualization solutions who want to understand and implement the next generation of enterprise virtualization management for Power Systems. Unless stated otherwise, the content of this publication refers to IBM PowerVC Version 1.3.2.

### **Implementing Systems Management of IBM PureFlex System**

IBM® Workload Deployer provides a solution to creating, deploying, and managing workloads in an on-premise or private cloud. It is rich in features that allow you to quickly build and deploy virtual systems from base images, to extend those images, and to customize them for future use as repeatable deployable units. IBM Workload Deployer also provides an application-centric capability enabling rapid deployment of business applications. By using either of these deployment models, an organization can quickly instantiate a complete application platform for development, test, or production. The IBM Workload Deployer uses the concept of patterns to describe the logical configuration of both the physical and virtual assets that comprise a particular solution. The use of patterns allows an organization to construct a deployable solution one time, and then dispense the final product on demand. patterns are composed of an operating system and IBM

software solutions, such as IBM WebSphere® Application Server and IBM WebSphere Virtual Enterprise. patterns are constructed to support a single application workload. The IBM Workload Deployer is shipped with a set of pre-loaded virtual images and virtual patterns. These images and patterns can be used to create comprehensive and flexible middleware solutions. They can also be cloned and customized to suit your specific needs. This IBM Redbooks® publication looks at two different aspects of customizing virtual systems for deployment into the cloud. First, it explores the capabilities of IBM Image Construction and Composition Tool to build and provide highly customized virtual images for use in virtual system patterns on the IBM Workload Deployer. Next, it looks at the virtual application capabilities of the IBM Workload Deployer, including those capabilities that allow you to deploy enterprise applications and database services to the cloud. It also introduces the IBM Workload Deployer Plugin Development Kit, which allows you to further extend the capabilities of the virtual application patterns.

### **IBM Power Systems SR-IOV: Technical Overview and Introduction**

A guide to getting the most out of a Roomba vacuum cleaner covers such topics as setting up a Bluetooth interface, building a serial interface tether, connecting the Roomba to the Internet, and replacing Roomba's brain.

## **IBM i 7.1 Technical Overview with Technology Refresh Updates**

This IBM® Redbooks® publication provides a technical overview of the features, functions, and enhancements that are available in IBM i 7.2, including all the available Technology Refresh (TR) levels, from TR1 to TR3. This publication provides a summary and brief explanation of the many capabilities and functions in the operating system. It also describes many of the licensed programs and application development tools that are associated with IBM i. The information that is provided in this book is useful for clients, IBM Business Partners, and IBM service professionals that are involved with planning, supporting, upgrading, and implementing IBM i 7.2 solutions.

## **IBM i 7.2 Technical Overview with Technology Refresh Updates**

This IBM® Redbooks® publication helps you install, tailor, and configure the new IBM PowerHA® SystemMirror® for AIX® 7.1.1 Standard Edition. This book gives an understanding of the Cluster Aware AIX (CAA). This book helps you design a solution to migrate from the previous version of the IBM PowerHA. This IBM Redbooks publication is targeted toward technical professionals (consultants, technical support staff, IT architects, and IT specialists) responsible for providing continuous availability solutions and support.

## **IBM System Storage Solutions Handbook**

This IBM® Redbooks® publication focuses on gathering the correct technical information, and laying out simple guidance for optimizing code performance on IBM POWER8® processor-based systems that run the IBM AIX®, IBM i, or Linux operating systems. There is straightforward performance optimization that can be performed with a minimum of effort and without extensive previous experience or in-depth knowledge. The POWER8 processor contains many new and important performance features, such as support for eight hardware threads in each core and support for transactional memory. The POWER8 processor is a strict superset of the IBM POWER7+™ processor, and so all of the performance features of the POWER7+ processor, such as multiple page sizes, also appear in the POWER8 processor. Much of the technical information and guidance for optimizing performance on POWER8 processors that is presented in this guide also applies to POWER7+ and earlier processors, except where the guide explicitly indicates that a feature is new in the POWER8 processor. This guide strives to focus on optimizations that tend to be positive across a broad set of IBM POWER® processor chips and systems. Specific guidance is given for the POWER8 processor; however, the general guidance is applicable to the IBM POWER7+, IBM POWER7®, IBM POWER6®, IBM POWER5, and even to earlier processors. This guide is directed at personnel who are responsible for performing migration and implementation activities on POWER8 processor-based systems. This includes system

administrators, system architects, network administrators, information architects, and database administrators (DBAs).

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

This text describes the functions that the BIOS controls and how these relate to the hardware in a PC. It covers the CMOS and chipset set-up options found in most common modern BIOSs. It also features tables listing error codes needed to troubleshoot problems caused by the BIOS.

### **System z Mean Time to Recovery Best Practices**

This IBM® Redbooks® publication helps strengthen the position of the IBM PowerHA® SystemMirror® for Linux solution with well-defined and documented deployment models within an IBM Power Systems™ environment, which provides customers a planned foundation for business resilience and disaster recovery (DR) for their IBM Power Systems infrastructure solutions. This book addresses topics to help answer customers' complex high availability (HA) and DR requirements for IBM AIX® and Linux on IBM Power Systems servers to help maximize system availability and resources and provide technical documentation to transfer the how-to-skills to users and support teams. This publication is targeted at technical

professionals (consultants, technical support staff, IT architects, and IT specialists) who are responsible for providing HA and DR solutions and support for IBM PowerHA SystemMirror for AIX and Linux Standard and Enterprise Editions on IBM Power Systems servers.

### **IBM PowerHA SystemMirror Standard Edition 7.1.1 for AIX Update**

This IBM Redbooks publication describes the concepts, architecture, and implementation of the IBM DS8900F family. The book provides reference information to assist readers who need to plan for, install, and configure the DS8900F systems. This edition applies to DS8900F systems with IBM DS8000® Licensed Machine Code (LMC) 7.9.10 (bundle version 89.10.xx.x), referred to as Release 9.1. The DS8900F family offers two classes: IBM DS8910F: Flexibility Class all-flash: The Flexibility Class is designed to reduce complexity while addressing various workloads at the lowest DS8900F family entry cost. IBM DS8950F: Agility Class all-flash: The Agility Class is designed to consolidate all your mission-critical workloads for IBM Z®, IBM LinuxONE, IBM Power Systems, and distributed environments under a single all-flash storage solution. The DS8900F architecture relies on powerful IBM POWER9™ processor-based servers that manage the cache to streamline disk input/output (I/O), which maximizes performance and

throughput. These capabilities are further enhanced by High-Performance Flash Enclosures (HPFE) Gen2. Like its predecessors, the DS8900F supports advanced disaster recovery (DR) solutions, business continuity solutions, and thin provisioning. The IBM DS8910F Rack-Mounted model 993 is described in a separate publication: IBM DS8910F Model 993 Rack-Mounted Storage System Release 9.1, REDP-5566.

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