Db2 For Z Os Stored Procedures Update Michigan Db2 Users

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Managing DB2 for z/OS Utilities with DB2 Tools Solution Packs - Paolo Bruni 2013-07-16
IBM® DB2® Tools for z/OS® support and take advantage of the latest versions of DB2 for z/OS. These tools are integral for the administration of the DB2 for z/OS environment and for optimization of data performance. In addition, the IBM portfolio addresses additional client requirements in the areas of data governance and version upgrade acceleration. Underlying the operation of any database management system are the utilities. With the number of database objects growing exponentially, managing utility jobs, meeting service level agreements (SLAs), and ensuring recoverability can be overwhelming. IBM offers DB2 Tools solution packs that assist in the DB2 utilities management process. Solution packs combine several products into a single consolidated solution providing everything necessary to ensure the execution of a set of database administration functions. The goals are to reduce the operational complexity and reduce cost. The objective of this IBM Redbooks® publication is to document the added value in terms of productivity and performance for database administrators when using the IBM DB2 Utilities Solution Pack and the IBM DB2 Fast Copy Solution Pack. We show the functions of the tools provided by the solution packs as used in real-life scenarios and adopting utilities best practices.
DB2 10 for z/OS Performance Topics - Paolo Bruni 2013-08-23
DB2® 10 for z/OS can reduce the total DB2 CPU demand from 5-20%, compared to DB2 9, when you take advantage of all the enhancements. Many CPU reductions are built in directly to DB2, requiring no application changes. Some enhancements are implemented through normal DB2 activities through rebinding, restructuring database definitions, improving applications, and utility processing. The CPU demand reduction features have the potential to provide significant total cost of ownership savings based on the application mix and transaction types. Improvements in optimization reduce costs by processing SQL automatically with more efficient data access paths. Improvements through a range-list index scan access method, list prefetch for IN-list, more parallelism for select and index insert processing, better work file usage, better record identifier (RID) pool overflow management, improved sequential detection, faster log I/O, access path certainty evaluation for static SQL, and improved distributed data facility (DDF) transaction flow all provide more efficiency without changes to applications. These enhancements can reduce total CPU enterprise costs because of improved

efficiency in the DB2 10 for z/OS. DB2 10 includes numerous performance enhancements for Large Objects (LOBs) that save disk space for small LOBs and that provide dramatically better performance for LOB retrieval, inserts, load, and import/export using DB2 utilities. DB210 can also more effectively REORG partitions that contain LOBs. This IBM Redbooks® publication® provides an overview of the performance impact of DB2 10 for z/OS discussing the overall performance and possible impacts when moving from version to version. We include performance measurements that were made in the laboratory and provide some estimates. Keep in mind that your results are likely to vary, as the conditions and work will differ. In this book, we assume that you are somewhat familiar with DB2 10 for z/OS. See DB2 10 for z/OS Technical Overview, SG24-7892-00, for an introduction to the new functions.

IBM DB2 12 for z/OS Technical Overview - Meg Bernal 2019-07-03

IBM® DB2® 12 for z/OS® delivers key innovations that increase availability, reliability, scalability, and security for your business-critical information. In addition, DB2 12 for z/OS offers performance and functional improvements for both transactional and analytical workloads and makes installation and migration simpler and faster. DB2 12 for z/OS also allows you to develop applications for the cloud and mobile devices by providing self-provisioning, multitenancy, and self-managing capabilities in an agile development environment. DB2 12 for z/OS is also the first version of DB2 built for continuous delivery. This IBM Redbooks® publication introduces the enhancements made available with DB2 12 for z/OS. The contents help database administrators to understand the new functions and performance enhancements, to plan for ways to use the key new capabilities, and to justify the investment in installing or migrating to DB2 12.

Smarter Business: Dynamic Information with IBM InfoSphere Data Replication CDC - Chuck Ballard 2012-03-12

To make better informed business decisions, better serve clients, and increase operational efficiencies, you must be aware of changes to key data as they occur. In addition, you must enable the immediate delivery of this information to the people and processes that need to act upon it. This ability to sense and respond to data changes is fundamental to dynamic warehousing, master data management, and many other key initiatives. A major challenge in providing this type of environment is determining how to tie all the independent systems together and process the immense data flow requirements. IBM® InfoSphere® Change Data Capture (InfoSphere CDC) can respond to that challenge, providing programming-free data integration, and eliminating redundant data transfer, to minimize the impact on production systems. In this IBM Redbooks® publication, we show you examples of how InfoSphere CDC can be used to implement integrated systems, to keep those systems updated immediately as changes occur, and to use your existing infrastructure and scale up as your workload grows. InfoSphere CDC can also enhance your investment in other software, such as IBM DataStage® and IBM QualityStage®, IBM InfoSphere Warehouse, and IBM InfoSphere Master Data Management Server, enabling real-time and event-driven processes. Enable the integration of your critical data and make it immediately available as your business needs it.

Modernize Your IBM DB2 for IBM z/OS Maintenance with Utility Autonomics - Dean Brown 2015-08-20

IBM® DB2® for IBM z/OS® helps lower the cost of managing data by automating administration, increasing storage efficiency, improving performance, and simplifying the deployment of virtual appliances. By automating tasks such as memory allocation, storage management, and business policy maintenance, DB2 is able to perform many management tasks itself, freeing up Database Administrators to focus on new projects. This IBM Redbooks® publication introduces autonomics for DB2 for z/OS. IBM provides several different components that, when combined, can create an autonomic database environment. All these respective components cover certain aspects of autonomics, which can collaborate into one coherent solution. In our evolution of autonomics and the need to move to smarter systems there has been a bigger drive to the concept of "Active" versus

"Passive" autonomics. With the inclusion of the IBM Management Console for IMSTM and DB2 for z/OS and the Autonomics Director, it is now easier than ever to make that transition by leveraging the strength of the DB2 Utilities Solution Pack for z/OS all in one standardized and centralized interface. This publication guides you through the business reasons for adopting autonomic solutions, and provides step-by-step guidance to implement these capabilities in your DB2 for z/OS configuration. This publication is of interest primarily to DB2 Database Administrators and DB2 Systems Programmers, and for anyone looking to understand the benefits of DB2 autonomic solutions.

IBM zEnterprise 196 Technical Guide - Bill White 2012-03-19

The popularity of the Internet and the affordability of IT hardware and software have resulted in an explosion of applications, architectures, and platforms. Workloads have changed. Many applications, including mission-critical ones, are deployed on a variety of platforms, and the 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. The zEnterprise System consists of the IBM zEnterprise 196 central processor complex, the IBM zEnterprise Unified Resource Manager, and the IBM zEnterprise BladeCenter® Extension. The z196 is designed with improved scalability, performance, security, resiliency, availability, and virtualization. The z196 Model M80 provides up to 1.6 times the total system capacity of the z10TM EC Model E64, and all z196 models provide up to twice the available memory of the z10 EC. The zBX infrastructure works with the z196 to enhance System z virtualization and management through an integrated hardware platform that spans mainframe, POWER7TM, and System x® technologies. Through the Unified Resource Manager, the zEnterprise System is managed as a single pool of resources, integrating system and workload management across the environment. This IBM® Redbooks® publication provides an overview of the zEnterprise System 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 wanting to understand the 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. The changes to this edition are based on the System z hardware announcement dated July 12, 2011.

Subsystem and Transaction Monitoring and Tuning with DB2 11 for z/OS - Paolo Bruni 2015-07-29

This IBM® Redbooks® publication discusses in detail the facilities of DB2® for z/OS®, which allow complete monitoring of a DB2 environment. It focuses on the use of the DB2 instrumentation facility component (IFC) to provide monitoring of DB2 data and events and includes suggestions for related tuning. We discuss the collection of statistics for the verification of performance of the various components of the DB2 system and accounting for tracking the behavior of the applications. We have intentionally omitted considerations for query optimization; they are worth a separate document. Use this book to activate the right traces to help you monitor the performance of your DB2 system and to tune the various aspects of subsystem and application performance.

Enabling Real-time Analytics on IBM z Systems Platform - Lydia Parziale 2016-08-08

Regarding online transaction processing (OLTP) workloads, IBM® z SystemsTM platform, with IBM DB2®, data sharing, Workload Manager (WLM), geoplex, and other high-end features, is the widely acknowledged leader. Most customers now integrate business analytics with OLTP by running, for example, scoring functions from transactional context for real-time analytics or by applying machine-learning algorithms on enterprise data that is kept on the mainframe. As a result, IBM adds investment so clients can keep the complete lifecycle for data analysis, modeling, and scoring on z Systems control in a cost-efficient way, keeping the qualities of services in availability, security, reliability that z Systems solutions offer. Because of the changed architecture and tighter integration, IBM has shown, in a customer proof-of-concept, that a particular client was able to achieve an orders-

of-magnitude improvement in performance, allowing that client's data scientist to investigate the data in a more interactive process. Open technologies, such as Predictive Model Markup Language (PMML) can help customers update single components instead of being forced to replace everything at once. As a result, you have the possibility to combine your preferred tool for model generation (such as SAS Enterprise Miner or IBM SPSS® Modeler) with a different technology for model scoring (such as Zementis, a company focused on PMML scoring). IBM SPSS Modeler is a leading data mining workbench that can apply various algorithms in data preparation, cleansing, statistics, visualization, machine learning, and predictive analytics. It has over 20 years of experience and continued development, and is integrated with z Systems. With IBM DB2 Analytics Accelerator 5.1 and SPSS Modeler 17.1, the possibility exists to do the complete predictive model creation including data transformation within DB2 Analytics Accelerator. So, instead of moving the data to a distributed environment, algorithms can be pushed to the data, using cost-efficient DB2 Accelerator for the required resource-intensive operations. This IBM Redbooks® publication explains the overall z Systems architecture, how the components can be installed and customized, how the new IBM DB2 Analytics Accelerator loader can help efficient data loading for z Systems data and external data, how in-database transformation, in-database modeling, and in-transactional real-time scoring can be used, and what other related technologies are available. This book is intended for technical specialists and architects, and data scientists who want to use the technology on the z Systems platform. Most of the technologies described in this book require IBM DB2 for z/OS®. For acceleration of the data investigation, data transformation, and data modeling process, DB2 Analytics Accelerator is required. Most value can be achieved if most of the data already resides on z Systems platforms, although adding external data (like from social sources) poses no problem at all.

New Ways of Running Batch Applications on z/OS: Volume 4 IBM IMS - Denis Gaebler 2014-05-28

Mainframe computers play a central role in the daily operations of many of the world's largest corporations. Batch processing is still a fundamental, mission-critical component of the workloads that run on the mainframe. A large portion of the workload on IBM® z/OS® systems is processed in batch mode. This IBM Redbooks® publication is the fourth volume in a series of four. They address new technologies introduced by IBM to facilitate the use of hybrid batch applications that combine the best aspects of Java and procedural programming languages such as COBOL. This volume focuses on the latest enhancements in IBM IMSTM batch support. IMS has been available to clients for 45 years as IMS Transaction Manager, IMS Database Manager, or both. The audience for this book includes IT architects and application developers with a focus on batch processing on the z/OS platform.

External Procedures, Triggers, and User-Defined Functions on IBM DB2 for i - Hernando Bedoya 2016-04-25

Procedures, triggers, and user-defined functions (UDFs) are the key database software features for developing robust and distributed applications. IBM Universal DatabaseTM for i (IBM DB2® for i) supported these features for many years, and they were enhanced in V5R1, V5R2, and V5R3 of IBM® OS/400® and V5R4 of IBM i5/OSTM. This IBM Redbooks® publication includes several of the announced features for procedures, triggers, and UDFs in V5R1, V5R2, V5R3, and V5R4. This book includes suggestions, guidelines, and practical examples to help you effectively develop IBM DB2 for i procedures, triggers, and UDFs. The following topics are covered in this book: External stored procedures and triggers Java procedures (both Java Database Connectivity (JDBC) and Structured Query Language for Java (SQLJ)) External triggers External UDFs This publication also offers examples that were developed in several programming languages, including RPG, COBOL, C, Java, and Visual Basic, by using native and SQL data access interfaces. This book is part of the original IBM Redbooks publication, Stored Procedures, Triggers, and User-Defined Functions on DB2 Universal Database for iSeries, SG24-6503-02, that covered external procedures, triggers, and functions, and also SQL procedures, triggers, and functions. All of

the information that relates to external routines was left in this publication. All of the information that relates to SQL routines was rewritten and updated. This information is in the new IBM Redbooks publication, SQL Procedures, Triggers, and Functions on IBM DB2 for i, SG24-8326. This book is intended for anyone who wants to develop IBM DB2 for i procedures, triggers, and UDFs. Before you read this book, you need to know about relational database technology and the application development environment on the IBM i server.

Understanding DB2 - Raul F. Chong 2007-12-29

The Easy, Visual Way to Master IBM® DB2 for Linux®, UNIX®, and Windows®—Fully Updated for Version 9.5 IBM DB2 9 and DB2 9.5 provide breakthrough capabilities for providing Information on Demand, implementing Web services and Service Oriented Architecture, and streamlining information management. Understanding DB2: Learning Visually with Examples, Second Edition, is the easiest way to master the latest versions of DB2 and apply their full power to your business challenges. Written by four IBM DB2 experts, this book introduces key concepts with dozens of examples drawn from the authors' experience working with DB2 in enterprise environments. Thoroughly updated for DB2 9.5, it covers new innovations ranging from manageability to performance and XML support to API integration. Each concept is presented with easy-to-understand screenshots, diagrams, charts, and tables. This book is for everyone who works with DB2: database administrators, system administrators, developers, and consultants. With hundreds of well-designed review questions and answers, it will also help professionals prepare for the IBM DB2 Certification Exams 730, 731, or 736. Coverage includes Choosing the right version of DB2 for your needs Installing and configuring DB2 Understanding the DB2 environment, instances, and databases Establishing client and server connectivity Working with database objects Utilizing breakthrough pureXML™ technology, which provides for nativeXML support Mastering administration, maintenance, performance optimization, troubleshooting, and recovery Understanding improvements in the DB2 process, memory, and storage models Implementing effective database security Leveraging the power of SQL and XQuery

Hybrid Analytics Solution using IBM DB2 Analytics Accelerator for z/OS V3.1 - Paolo Bruni 2013-09-27

The IBM® DB2® Analytics Accelerator Version 3.1 for IBM z/OS® (simply called Accelerator in this book) is a union of the IBM System z® quality of service and IBM Netezza® technology to accelerate complex queries in a DB2 for z/OS highly secure and available environment. Superior performance and scalability with rapid appliance deployment provide an ideal solution for complex analysis. In this IBM Redbooks® publication, we provide technical decision-makers with a broad understanding of the benefits of Version 3.1 of the Accelerator's major new functions. We describe their installation and the advantages to existing analytical processes as measured in our test environment. We also describe the IBM zEnterprise® Analytics System 9700, a hybrid System z solution offering that is surrounded by a complete set of optional packs to enable customers to custom tailor the system to their unique needs..

z/OS Version 2 Release 1 Technical Updates - Karan Singh 2014-08-25

This IBM® Redbooks® publication provides a broad understanding of the changes, new features, and new functions introduced with IBM z/OS® Version 2 Release 1 (2.1). This new version marks a new era of z/OS. Version 2 lays the groundwork for the next tier of mainframe computing, enabling you to pursue the innovation to drive highly scalable workloads, including private clouds, support for mobile and social applications, and more. Its unrivaled security infrastructure helps secure vast amounts of data. Its highly optimized availability can help you deliver new data analytics solutions. And its continued improvements in management help automate the operations of IBM zEnterprise® systems. With support for IBM zEnterprise EC12 (zEC12, Enterprise Class) and zEnterprise BC12 (zBC12, Business Class) systems, z/OS 2.1 offers unmatched availability, scalability, and security to meet the business challenges of cloud services and data analytics and the security demands of mobile and social network applications. Through its unique design and qualities of service, z/OS provides the

foundation that you need to support these demanding workloads alongside your traditional mission-critical applications. WinterShare 2014 presentation This presentation on z/OS V2.1 (June 2014) represents an update to the WinterShare 2014 presentation and reflects z/OS enhancements delivered since general availability last Fall. Please listen to John Eells of our Technical Strategy team present this one-hour comprehensive technical overview of z/OS V2.1. Audio Presentation (59MB) Corresponding charts

Data Studio and DB2 for z/OS Stored Procedures - Paolo Bruni 2011-03-15

Stored procedures can provide major benefits in the areas of application performance, code re-use, security, and integrity. DB2® has offered ever-improving support for developing and operating stored procedures. This IBM® RedpaperTM publication is devoted to tools that can be used for accelerating the development and debugging process, in particular to the stored procedure support provided by the latest and fastest evolving IBM product: Data Studio. We discuss topics related to handling stored procedures across different platforms. We concentrate on how to use tools for deployment of stored procedures on z/OS®, but most considerations apply to the other members of the DB2 family. This paper is a major update of Part 6, "Cool tools for an easier life," of the IBM Redbooks® publication DB2 9 for z/OS Stored Procedures: Through the CALL and Beyond, SG24-7604.

Extremely pureXML in DB2 10 for z/OS - Paolo Bruni 2011-01-28

The DB2® pureXML® feature offers sophisticated capabilities to store, process and manage XML data in its native hierarchical format. By integrating XML data intact into a relational database structure, users can take full advantage of DB2's relational data management features. In this IBM® Redbooks® publication, we document the steps for the implementation of a simple but meaningful XML application scenario. We have chosen to provide samples in COBOL and JavaTM language. The purpose is to provide an easy path to follow to integrate the XML data type for the traditional DB2 for z/OS® user. We also add considerations for the data administrator and suggest best practices for ease of use and better performance.

Optimizing DB2 Queries with IBM DB2 Analytics Accelerator for z/OS - Paolo Bruni 2012-12-20

The IBM® DB2® Analytics Accelerator Version 2.1 for IBM z/OS® (also called DB2 Analytics Accelerator or Query Accelerator in this book and in DB2 for z/OS documentation) is a marriage of the IBM System z® Quality of Service and Netezza® technology to accelerate complex queries in a DB2 for z/OS highly secure and available environment. Superior performance and scalability with rapid appliance deployment provide an ideal solution for complex analysis. This IBM Redbooks® publication provides technical decision-makers with a broad understanding of the IBM DB2 Analytics Accelerator architecture and its exploitation by documenting the steps for the installation of this solution in an existing DB2 10 for z/OS environment. In this book we define a business analytics scenario, evaluate the potential benefits of the DB2 Analytics Accelerator appliance, describe the installation and integration steps with the DB2 environment, evaluate performance, and show the advantages to existing business intelligence processes.

InfoSphere Data Replication for DB2 for z/OS and WebSphere Message Queue for z/OS: Performance Lessons - Miao Zheng 2012-12-22

Understanding the impact of workload and database characteristics on the performance of both DB2®, MQ, and the replication process is useful for achieving optimal performance.Although existing applications cannot generally be modified, this knowledge is essential for properly tuning MQ and Q Replication and for developing best practices for future application development and database design. It also helps with estimating performance objectives that take these considerations into account. Performance metrics, such as rows per second, are useful but imperfect. How large is a row? It is intuitively, and correctly, obvious that replicating small DB2 rows, such as 100 bytes long, takes fewer resources and is more efficient than replicating DB2 rows that are tens of thousand bytes long. Larger rows create more work in each component of the replication process. The more bytes there are to read from the DB2 log, makes

more bytes to transmit over the network and to update in DB2 at the target. Now, how complex is the table definition? Does DB2 have to maintain several unique indexes each time a row is changed in that table? The same argument applies to transaction size: committing each row change to DB2 as opposed to committing, say, every 500 rows also means more work in each component along the replication process. This RedpaperTM reports results and lessons learned from performance testing at the IBM® laboratories, and it provides configuration and tuning recommendations for DB2, Q Replication, and MQ. The application workload and database characteristics studied include transaction size, table schema complexity, and DB2 data type.

DB2 for z/OS and WebSphere Integration for Enterprise Java Applications - Paolo Bruni 2013-08-07

IBM DB2® for z/OS® is a high-performance database management system (DBMS) with a strong reputation in traditional high-volume transaction workloads that are based on relational technology. IBM WebSphere® Application Server is web application server software that runs on most platforms with a web server and is used to deploy, integrate, execute, and manage Java Platform, Enterprise Edition applications. In this IBM® Redbooks® publication, we describe the application architecture evolution focusing on the value of having DB2 for z/OS as the data server and IBM z/OS® as the platform for traditional and for modern applications. This book provides background technical information about DB2 and WebSphere features and demonstrates their applicability presenting a scenario about configuring WebSphere Version 8.5 on z/OS and type 2 and type 4 connectivity (including the XA transaction support) for accessing a DB2 for z/OS database server taking into account high-availability requirements. We also provide considerations about developing applications, monitoring performance, and documenting issues. DB2 database administrators, WebSphere specialists, and Java application developers will appreciate the holistic approach of this document.

DB2 9 for Z/OS Stored Procedures - Paolo Bruni 2008-01-01

DB2 Developer's Guide - Craig Mullins 2012

DB2 Developer's Guide is the field's #1 go-to source for on-the-job information on programming and administering DB2 on IBM z/OS mainframes. Now, three-time IBM Information Champion Craig S. Mullins has thoroughly updated this classic for DB2 v9 and v10. Mullins fully covers new DB2 innovations including temporal database support; hashing; universal tablespaces; pureXML; performance, security and governance improvements; new data types, and much more. Using current versions of DB2 for z/OS, readers will learn how to: * Build better databases and applications for CICS, IMS, batch, CAF, and RRSAF * Write proficient, code-optimized DB2 SQL * Implement efficient dynamic and static SQL applications * Use binding and rebinding to optimize applications * Efficiently create, administer, and manage DB2 databases and applications * Design, build, and populate efficient DB2 database structures for online, batch, and data warehousing * Improve the performance of DB2 subsystems, databases, utilities, programs, and SQL stat DB2 Developer's Guide, Sixth Edition builds on the unique approach that has made previous editions so valuable. It combines: * Condensed, easy-to-read coverage of all essential topics: information otherwise scattered through dozens of documents * Detailed discussions of crucial details within each topic * Expert, field-tested implementation advice * Sensible examples

DB2 9 for z/OS Performance Topics - Paolo Bruni 2012-09-28

DB2 9 for z/OS is an exciting new version, with many improvements in performance and little regression. DB2 V9 improves availability and security, as well as adds greatly to SQL and XML functions. Optimization improvements include more SQL functions to optimize, improved statistics for the optimizer, better optimization techniques, and a new approach to providing information for tuning. V8 SQL procedures were not eligible to run on the IBM System z9 Integrated Information Processor (zIIP), but changing to use the native SQL procedures on DB2 V9 makes the work eligible for zIIP processing. The performance of varying length data can improve substantially if there are large numbers of varying length columns. Several

improvements in disk access can reduce the time for sequential disk access and improve data rates. The key DB2 9 for z/OS performance improvements include reduced CPU time in many utilities, deep synergy with IBM System z hardware and z/OS software, improved performance and scalability for inserts and LOBs, improved SQL optimization, zIIP processing for remote native SQL procedures, index compression, reduced CPU time for data with varying lengths, and better sequential access. Virtual storage use below the 2 GB bar is also improved. This IBM Redbooks publication provides an overview of the performance impact of DB2 9 for z/OS, especially performance scalability for transactions, CPU, and elapsed time for queries and utilities. We discuss the overall performance and possible impacts when moving from version to version. We include performance measurements that were made in the laboratory and provide some estimates. Keep in mind that your results are likely to vary, as the conditions and work will differ. In this book, we assume that you are familiar with DB2 V9. See DB2 9 for z/OS Technical Overview, SG24-7330, for an introduction to the new functions.

Managing IBM DB2 10 for z/OS Using the IBM DB2 Administration Tool for z/OS Version 10 - Paolo Bruni 2011-04-22

Today's business environment has increased in the complexity and rate of change that a database administrator must control. The ability to respond quickly to a changing environment is constantly challenged by the explosion of data growth combined with a decline in an experienced work staff. The IBM® DB2® Administration Tool for z/OS® Version 10 helps you become productive from Day 1 with DB2 10 for z/OS by using performance savings right away, lowering the CPU costs while reducing the batch window. Users experience higher data availability by easily managing online schema changes, including additional columns to indexes to use index-only access. Customers are able to experience higher data availability through simplified recovery operations: Access new functionality in DB2 10 for z/OS to lower costs and improve efficiency both before, during, and after the DB2 migration process. Maximize the performance of your key DB2 business applications to speed their deployment in DB2 10 for z/OS. Improve the productivity and efficiency of your staff when DB2 10 for z/OS is running. This IBM Redbooks® publication highlights the data administration enhancements introduced by DB2 Administration Tool for z/OS Version 10 by providing scenarios of their use with the new functions provided by DB2 10 for z/OS.

DB2 Universal Database for OS/390 Version 7.1 Certification Guide - Richard Yevich 2001

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IBM Integrated Synchronization: Incremental Updates Unleashed - Christian Michel 2021-01-27

The IBM® Db2® Analytics Accelerator (Accelerator) is a logical extension of Db2 for IBM z/OS® that provides a high-speed query engine that efficiently and cost-effectively runs analytics workloads. The Accelerator is an integrated back-end component of Db2 for z/OS. Together, they provide a hybrid workload-optimized database management system that seamlessly manages queries that are found in transactional workloads to Db2 for z/OS and queries that are found in analytics applications to Accelerator. Each query runs in its optimal environment for maximum speed and cost efficiency. The incremental update function of Db2 Analytics Accelerator for z/OS updates Accelerator-shadow tables continually. Changes to the data in original Db2 for z/OS tables are propagated to the corresponding target tables with a high frequency and a brief delay. Query results from Accelerator are always extracted from recent, close-to-real-time data. An incremental update capability that is called IBM InfoSphere® Change Data Capture (InfoSphere CDC) is provided by IBM InfoSphere Data Replication for z/OS up to Db2 Analytics Accelerator V7.5. Since then, an extra new replication protocol between Db2 for z/OS and Accelerator that is called IBM Integrated Synchronization was introduced. With Db2 Analytics Accelerator V7.5, customers can choose which one to use. IBM Integrated Synchronization is a built-in product feature that you use to set up incremental updates. It does not require InfoSphere CDC, which is bundled with IBM Db2 Analytics Accelerator. In addition,

IBM Integrated Synchronization has more advantages: Simplified administration, packaging, upgrades, and support. These items are managed as part of the Db2 for z/OS maintenance stream. Updates are processed quickly. Reduced CPU consumption on the mainframe due to a streamlined, optimized design where most of the processing is done on the Accelerator. This situation provides reduced latency. Uses IBM Z® Integrated Information Processor (zIIP) on Db2 for z/OS, which leads to reduced CPU costs on IBM Z and better overall performance data, such as throughput and synchronized rows per second. On z/OS, the workload to capture the table changes was reduced, and the remainder can be handled by zIIPs. With the introduction of an enterprise-grade Hybrid Transactional Analytics Processing (HTAP) enabler that is also known as the Wait for Data protocol, the integrated low latency protocol is now enabled to support more analytical queries running against the latest committed data. IBM Db2 for z/OS Data Gate simplifies delivering data from IBM Db2 for z/OS to IBM Cloud® Pak® for Data for direct access by new applications. It uses the special-purpose integrated synchronization protocol to maintain data currency with low latency between Db2 for z/OS and dedicated target databases on IBM Cloud Pak for Data.

z/OS Traditional Application Maintenance and Support - Jonathan Sayles 2011-06-23

In this IBM® Redbooks® publication, we attempt to provide fresh insight into a problem domain that, in the authors' opinions, has been pushed to the back burner of technology writing for far too long—the domain of z/OS® (traditional) mainframe maintenance and production support. Since the mid-1980's, outside of a few websites and publications, this still-critical area of software has barely even received lip service by the world of mainstream technology media. In a small way, we are attempting address this situation. In this book, we provide information in "what and how to" sections on the value of z/OS maintenance and support—not the value of the software, which is hardly in question, but the value of the software developers, and how they collaborate, analyze, code, and test the applications, fixes, and enhancements under their responsibility. We present new 21st Century tools to help them achieve their goals more easily and effectively. These tools integrate and provide a 1 + 1 + 1 = 5 value-proposition, for companies that are still doing work the way they did when in the mid-1970's, when Gerald Ford was president of the United States. We are also describing, to a lesser extent, how you can effectively integrate the new tools with your existing development software stack, in order to find points of complimentary functionality. And we describe the new agile development and maintenance methodologies, and best practices for tools use and adoption. We hope that you find this work useful, and perhaps that it can fuel more discussion, future Redbooks publications, and other publications by IBM, or any vendor or group interested in this critical and vastly under-acknowledged technology domain.

DB2 10 for z/OS Technical Overview - Paolo Bruni 2014-07-16

IBM® DB2® Version 10.1 for z/OS® (DB2 10 for z/OS or just DB2 10 throughout this book) is the fourteenth release of DB2 for MVSTM. It brings improved performance and synergy with the System z® hardware and more opportunities to drive business value in the following areas: Cost savings and compliance through optimized innovations DB2 10 delivers value in this area by achieving up to 10% CPU savings for traditional workloads and up to 20% CPU savings for nontraditional workloads, depending on the environments. Synergy with other IBM System z platform components reduces CPU use by taking advantage of the latest processor improvements and z/OS enhancements. Streamline security and regulatory compliance through the separation of roles between security and data administrators, column level security access, and added auditing capabilities. Business insight innovations Productivity improvements are provided by new functions available for pureXML®, data warehousing, and traditional online TP applications Enhanced support for key business partners that allow you to get more from your data in critical business disciplines like ERP Bitemporal support for applications that need to correlate the validity of data with time. Business resiliency innovations Database on demand capabilities to ensure that information design can be changed dynamically, often without

database outages DB2 operations and utility improvements enhancing performance, usability, and availability by exploiting disk storage technology. The DB2 10 environment is available either for brand new installations of DB2, or for migrations from DB2 9 for z/OS or from DB2 UDB for z/OS Version 8 subsystems. This IBM Redbooks® publication introduces the enhancements made available with DB2 10 for z/OS. The contents help you understand the new functions and performance enhancements, start planning for exploiting the key new capabilities, and justify the investment in installing or migrating or skip migrating to DB2 10.

Installing and Configuring IBM Db2 AI for IBM z/OS v1.4.0 - Tim Hogan 2021-11-22

Artificial intelligence (AI) enables computers and machines to mimic the perception, learning, problem-solving, and decision-making capabilities of the human mind. AI development is made possible by the availability of large amounts of data and the corresponding development and wide availability of computer systems that can process all that data faster and more accurately than humans can. What happens if you infuse AI with a world-class database management system, such as IBM Db2®? IBM® has done just that with Db2 AI for z/OS (Db2ZAI). Db2ZAI is built to infuse AI and data science to assist businesses in the use of AI to develop applications more easily. With Db2ZAI, the following benefits are realized: Data science functionality Better built applications Improved database performance (and DBA's time and efforts are saved) through simplification and automation of error reporting and routine tasks Machine learning (ML) optimizer to improve query access paths and reduce the need for manual tuning and query optimization Integrated data access that makes data available from various vendors including private cloud providers. This IBM Redpaper® publication helps to simplify your installation by tailoring and configuration of Db2 AI for z/OS®. It was written for system programmers, system administrators, and database administrators.

DB2 Administration Solution Pack for z/OS: Streamlining DB2 for z/OS Database Administration - Paolo Bruni 2013-08-27

IBM® DB2® tools for z/OS® support and exploit the most current versions of DB2 for z/OS. These tools are integral for the administration of the DB2 for z/OS environment and optimization of data performance. DB2 Administration Solution Pack for z/OS V1.1 (5697-DAM) offers features, functions, and processes that database administrators (DBAs) can use to more effectively and efficiently manage DB2 environments. DB2 Administration Solution Pack for z/OS is composed of the following tools: IBM DB2 Administration Tool for z/OS IBM DB2 Object Comparison Tool for z/OS IBM InfoSphere® OptimTM Configuration Manager for DB2 for z/OS IBM DB2 Table Editor for z/OS This IBM Redbooks® publication shows how the delivered capabilities can help DBAs to more easily complete tasks associated with object management, change management, application management, and configuration management.

Using IBM System z As the Foundation for Your Information Management Architecture - Alex Louwe Kooijmans 2011-04-08

Many companies have built data warehouses (DWs) and have embraced business intelligence (BI) and analytics solutions. Even as companies have accumulated huge amounts of data, however, it remains difficult to provide trusted information at the right time and in the right place. The amount of data collected and available throughout the enterprise continues to grow even as the complexity and urgency of receiving meaningful information continues to increase. Producing meaningful and trusted information when it is needed can only be achieved by having a proper information architecture in place and a powerful underlying infrastructure. The amounts of data to mine, cleanse, and integrate are becoming so large that increasingly the infrastructure is becoming the bottleneck. This results in low refresh rates of the data in the data warehouse and in not having the information available in time where it is needed. And even before information can become available in a BI dashboard or a report, many preceding steps must take place: the collection of raw data; integration of data from multiple data stores, business units or geographies; transformation of data from one format to another; cubing data into data cubes; and finally, loading changes to data in the data warehouse. Combining the complexity of the information requirements, the growing amounts

of data, and multiple layers of the information architecture requires an extremely powerful infrastructure. This IBM® RedguideTM publication explains how you can use IBM System z® as the foundation for your information management architecture. The System z value proposition for information management is fueled by the traditional strengths of the IBM mainframe, the specific strengths of DB2® for z/OS®, and the broad functionality of the IBM information management software portfolio. For decades, System z has proven its ability to manage vast amounts of mission-critical data for many companies throughout the world; your data is safe on System z. The available information management functionality on System z has grown from database management systems to a full stack of solutions including solutions for content management, master data management, information integration, data warehousing, and business intelligence and analytics. The availability of Linux® on System z provides an excellent opportunity to place certain components in an easy-to-manage and scalable virtualized Linux server, while benefitting from the System z hardware strengths. DB2 on z/OS can remain the operational data store and the underlying database for the data warehouse. The next generation of System z is growing into a heterogeneous architecture with which you can take advantage of System z-managed "accelerators" running on IBM System x® or IBM Power Blades. The first of these accelerators is the IBM Smart Analytics Optimizer for DB2 for z/OS V1.1, an "all-in-one" solution in which System z, z/OS, DB2 on z/OS, an IBM BladeCenter®, and IBM storage work together to accelerate certain queries by one to two orders of magnitude. With the IBM Smart Analytics Optimizer, slices of data are periodically offloaded from DB2 on z/OS to the BladeCenter. After a query is launched against that data, it will automatically run against the data kept on the BladeCenter. The BladeCenter will process the query an order of magnitude faster than DB2 on z/OS, because all data is cached in internal memory on the BladeCenter and special compression techniques are used to keep the data footprint small and efficient. As a solid information management architecture ready for the future, System z has it all.

DB2 pureXML Cookbook - Matthias Nicola 2009-08-10

DB2 pureXML Cookbook Master the Power of the IBM Hybrid Data Server Hands-On Solutions and Best Practices for Developing and Managing XML Database Applications with DB2 More and more database developers and DBAs are being asked to develop applications and manage databases that involve XML data. Many are utilizing the highly praised DB2 pureXML technology from IBM. In the DB2 pureXML Cookbook, two leading experts from IBM offer the practical solutions and proven code samples that database professionals need to build better XML solutions faster. Organized by task, this book is packed with more than 700 easy-to-adapt “recipe-style” examples covering the entire application lifecycle–from planning and design through coding, optimization, and troubleshooting. This extraordinary library of recipes includes more than 250 XQuery and SQL/XML queries. With the authors’ hands-on guidance, you’ll learn how to combine pureXML “ingredients” to efficiently perform virtually any XML data management task, from the simplest to the most advanced. Coverage includes pureXML in DB2 9 for z/OS and DB2 9.1, 9.5, and 9.7 for Linux, UNIX, and Windows Best practices for designing XML data, applications, and storage objects Importing, exporting, loading, replicating, and federating XML data Querying XML data, from start to finish: XPath and XQuery data model and languages, SQL/XML, stored procedures, UDFs, and much more Avoiding common errors and inefficient XML queries Converting relational data to XML and vice versa Updating and transforming XML documents Defining and working with XML indexes Monitoring and optimizing the performance of XML queries and other operations Using XML Schemas to constrain and validate XML documents XML application development–including code samples for Java, .NET, C, COBOL,PL/1, PHP, and Perl

Rough Sets and Knowledge Technology - Duoqian Miao 2014-09-25

This book constitutes the thoroughly refereed conference proceedings of the 9th International Conference on Rough Sets and Knowledge Technology, RSKT 2014, held in Shanghai,

China, in October 2014. The 70 papers presented were carefully reviewed and selected from 162 submissions. The papers in this volume cover topics such as foundations and generalizations of rough sets, attribute reduction and feature selection, applications of rough sets, intelligent systems and applications, knowledge technology, domain-oriented data-driven data mining, uncertainty in granular computing, advances in granular computing, big data to wise decisions, rough set theory, and three-way decisions, uncertainty, and granular computing.

Streamline Business with Consolidation and Conversion to DB2 for z/OS - Paolo Bruni 2014-11-05

Time to market, flexibility, and cost reduction are among the top concerns common to all IT executives. If significant resource investments are placed in mature systems, IT organizations need to balance old and new technology. Older technology, such as non-IBM pre-relational databases, is costly, inflexible, and non-standard. Users store their information on the mainframe and thus preserve the skills and qualities of service their business needs. But users also benefit from standards-based modernization by migrating to IBM® DB2® for z/OS®. With this migration, users deliver new application features quickly and respond to changing business requirements more effectively. When migrating, the main decision is choosing between conversion and re-engineering. Although the rewards associated with rebuilding mature applications are high, so are the risks and customers that are embarking on a migration need that migration done quickly. In this IBM Redbooks® publication, we examine how to best approach the migration process by evaluating the environment, assessing the application as a conversion candidate, and identifying suitable tools. This publication is intended for IT decision makers and database administrators who are considering migrating their information to a modern database management system.

Architect's Guide to IBM CICS on System z - Phil Wakelin 2012-11-20

IBM® CICS® Transaction Server (CICS TS) has been available in various guises for over 40 years, and continues to be one of the most widely used pieces of commercial software. This IBM Redbooks® publication helps application architects discover the value of CICS Transaction Server to their business. This book can help architects understand the value and capabilities of CICS Transaction Server and the CICS tools portfolio. The book also provides detailed guidance on the leading practices for designing and integrating CICS applications within an enterprise, and the patterns and techniques you can use to create CICS systems that provide the qualities of service that your business requires.

Managing Ever-Increasing Amounts of Data with IBM DB2 for z/OS: Using Temporal Data Management, Archive Transparency, and the DB2 Analytics Accelerator - Mehmet Cuneyt Goksu 2015-10-20

IBM® DB2® Version 11.1 for z/OS® (DB2 11 for z/OS or just DB2 11 throughout this book) is the fifteenth release of DB2 for IBM MVSTM. The DB2 11 environment is available either for new installations of DB2 or for migrations from DB2 10 for z/OS subsystems only. This IBM Redbooks® publication describes enhancements that are available with DB2 11 for z/OS. The contents help database administrators to understand the new extensions and performance enhancements, to plan for ways to use the key new capabilities, and to justify the investment in installing or migrating to DB2 11. Businesses are faced with a global and increasingly competitive business environment, and they need to collect and analyze ever increasing amounts of data (Figure 1). Governments also need to collect and analyze large amounts of data. The main focus of this book is to introduce recent DB2 capability that can be used to address challenges facing organizations with storing and analyzing exploding amounts of business or organizational data, while managing risk and trying to meet new regulatory and compliance requirements. This book describes recent extensions to DB2 for z/OS in V10 and V11 that can help organizations address these challenges.

Transaction Processing: Past, Present, and Future - Alex Louwe Kooijmans 2012-09-29

The role of IT is becoming more prominent in people's daily lives and we are becoming increasingly dependent on computers. More and more business transactions are being automated, for example, ordering a book at an online bookstore or transferring money to a bank

account in another part of the world. No matter the type of transaction, we want it to be accurate and we want to have no doubts about its outcome. Transactions are also becoming more complex, driven by new ways of conducting business and new technologies. Smartphones now allow us to conduct transactions anywhere and at anytime. Technology paradigms, such as Web 2.0 and business event processing, enable businesses to increase the dynamics of a transaction through instrumentation that captures events, analyzes the associated data, and proactively interacts with the client in order to improve the customer experience. To adapt to the increasing volume and complexity of transactions requires an ongoing assessment of the current way of supporting transactions with IT. No matter what your business is, you need to ensure that your transactions are properly completed with integrity. Wrong or incomplete results can adversely affect client loyalty, affect company profits, and lead to claims, lawsuits, or fines. Companies need to be able to rely on computer systems that are 100% reliable and guarantee transaction integrity at all times. The IBM® mainframe is such a platform. Clients that have been using an IBM mainframe are conscious of its added value. For this IBM RedguideTM publication, we surveyed a number of companies that use the IBM mainframe and we asked them to tell us its most distinguishing qualities. They answered unanimously "reliability, availability, and scalability." They also do not see an alternative for running their mission-critical business workloads other than the IBM mainframe. When we surveyed our clients, we also asked them about the future. Clearly, major future trends demand significantly smarter, faster, and bigger transaction processing systems than we have today. Some of these trends are the availability of new computing paradigms, continuing growth of the mobile channel, further integration of organizations, massive growth of unstructured and uncertain data, and increasing complexity of IT systems. IBM continues to invest in mainframe technology leadership, which protects years of client investments on this platform. Today, well-known transaction processing (TP) middleware, such as the IBM CICS, IBM IMS, IBM z/TPF, and IBM WebSphere Application Server products, and also solutions for service-oriented architecture (SOA) and business process management (BPM) are available and fully optimized on the IBM mainframe running the mission-critical business workloads of many companies the world over. In 2010, IBM announced the IBM zEnterprise® system introducing a hybrid computing platform that combines the traditional IBM mainframe capabilities and the ability to use IBM blade servers, managed by a single management software. With zEnterprise, you can significantly reduce the complexity of your IT and achieve better service levels, while continuing to benefit from traditional mainframe strengths in transaction processing.

Db2 SQL Pl - Zamil Janmohamed 2004-11-15

IBM zEnterprise 114 Technical Guide - Bill White 2012-02-27

The popularity of the Internet and the affordability of IT hardware and software have resulted in an explosion of applications, architectures, and platforms. Workloads have changed. Many applications, including mission-critical ones, are deployed on a variety of platforms, and the 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 discusses the IBM zEnterprise System, 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 IBM zEnterprise 114 central processor complex, the IBM zEnterprise Unified Resource Manager, and the IBM zEnterprise BladeCenter® Extension. The z114 is designed with improved scalability, performance, security, resiliency, availability, and virtualization. The z114 provides up to 18% improvement in uniprocessor speed and up to a 12% increase in total system capacity for z/OS®, z/VM®, and Linux on System z over the z10TM Business Class (BC). The zBX infrastructure works with the z114 to enhance System z virtualization and management through an

integrated hardware platform that spans mainframe, POWER7TM, and 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 zEnterprise System 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 wanting to understand the 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.

Reliability and Performance with IBM DB2 Analytics Accelerator V4.1 - Paolo Bruni 2015-05-11

The IBM® DB2® Analytics Accelerator for IBM z/OS® is a high-performance appliance that integrates the IBM zEnterprise® infrastructure with IBM PureDataTM for Analytics, powered by IBM Netezza® technology. With this integration, you can accelerate data-intensive and complex queries in a DB2 for z/OS highly secure and available environment. DB2 and the Analytics Accelerator appliance form a self-managing hybrid environment running online transaction processing and online transactional analytical processing concurrently and efficiently. These online transactions run together with business intelligence and online analytic processing workloads. DB2 Analytics Accelerator V4.1 expands the value of high-performance analytics. DB2 Analytics Accelerator V4.1 opens to static Structured Query Language (SQL) applications and row set processing, minimizes data movement, reduces latency, and improves availability. This IBM Redbooks® publication provides technical decision-makers with an understanding of the benefits of version 4.1 of the Analytics Accelerator with DB2 11 for z/OS. It describes the installation of the new functions, and the advantages to existing analytical processes as measured in our test environment. This book also introduces the DB2 Analytics Accelerator Loader V1.1, a tool that facilitates the data population of the DB2 Analytics Accelerator.

Batch Modernization on z/OS - Mike Ebbers 2012-07-26

Mainframe computers play a central role in the daily operations of many of the world's largest corporations, and batch processing is a fundamental part of the workloads that run on the mainframe. A large portion of the workload on IBM® z/OS® systems is processed in batch mode. Although several IBM Redbooks® publications discuss application modernization on the IBM z/OS platform, this book specifically addresses batch processing in detail. Many different technologies are available in a batch environment on z/OS systems. This book demonstrates these technologies and shows how the z/OS system offers a sophisticated environment for batch. In this practical book, we discuss a variety of themes that are of importance for batch workloads on z/OS systems and offer examples that you can try on your own system. The audience for this book includes IT architects and application developers, with a focus on batch processing on the z/OS platform.

IBM Db2 Analytics Accelerator V7 High Availability and Disaster Recovery - Ute Baumbach 2020-10-21

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 RedpaperTM 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.