

## Overview - SQL

# October 15, 2015

# UDUG

DB2

## DB2 Information Management Software

DB2 11 for z/OS

Applications

Analytics

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MPW

SQL

Smart

Cloud

Online

Performance

Security

Migration

Evolution

On-Demand

Hybrid

Virtualization

Transactions

Available

Scalable

Connectivity

Content

Factor

Archival

Optimized

Web

Critical

Modern

Effective

Compatibility

Supreme

Reliable

24x7

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# **Db2 10 For Zos Technical Overview**

**Meg Bernal,Tammie Dang,Acacio  
Ricardo Gomes Pessoa,IBM Redbooks**



## **Db2 10 For Zos Technical Overview:**

**DB2 10 for z/OS Technical Overview** Paolo Bruni,Rafael Garcia,Sabine Kaschta,Josef Klitsch,Ravi Kumar,Andrei Lurie,Michael Parbs,Rajesh Ramachandran,IBM Redbooks,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.

**DB2 10 for z/OS Performance Topics** Paolo Bruni,Felipe Bortoletto,Ravikumar Kalyanasundaram,Glenn McGeoch,Roger Miller,Cristian Molaro,Yasuhiro Ohmori,Michael Parbs,IBM Redbooks,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 **DB2 11 for z/OS Technical Overview** Paolo Bruni,Felipe Bortoletto,Ravikumar Kalyanasundaram,Sabine Kaschta,Glenn McGeoch,Cristian Molaro,IBM Redbooks,2016-05-05 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 It brings performance and synergy with the IBM System z hardware and opportunities to drive business value in the following areas DB2 11 can provide unmatched reliability availability and scalability Improved data sharing performance and efficiency Less downtime by removing growth limitations Simplified management improved autonomies and reduced planned outages DB2 11 can save money and save time Aggressive CPU reduction goals Additional utilities performance and CPU improvements Save time and resources with new autonomic and application development capabilities DB2 11 provides simpler faster migration SQL compatibility divorce system migration from application migration Access path stability improvements Better application performance with SQL and XML enhancements DB2 11 includes enhanced business analytics Faster more efficient performance for query workloads Accelerator enhancements More efficient inline database scoring enables predictive analytics 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 introduces the enhancements made available with DB2 11 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 11 **DB2 12 for z/OS Technical Overview and Highlights** Gareth Jones,IBM Redbooks,2017-07-12 This paper provides a high level overview of the functions features and improvements that were introduced in IBM DB2 12 for z OS These businesses gain a competitive advantage improve business efficiency and effectiveness and discover business insights from their existing data The paper is intended for DB2 system administrators database administrators and application programmers but might also be of interest to IT managers and executives A more detailed description of DB2 12 is available in IBM DB2 12 for z OS Technical Overview SG24 8383 The purpose of this paper is to provide the reader with an understanding of some of the key changes that were introduced in DB2 12 for z OS including the following topics Performance for traditional workloads Performance enablers for modern applications Application

Enablement Reliability availability and scalability Security Migration and prerequisites *IBM DB2 12 for z/OS Technical Overview* Meg Bernal,Tammie Dang,Acacio Ricardo Gomes Pessoa,IBM Redbooks,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 Extremely pureXML in DB2 10 for z/OS Paolo Bruni,Neale Armstrong,Ravi Kumar,Kirsten Ann Larsen,Tink Tysor,Hao Zhang,IBM Redbooks,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 Java™ 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 Security Functions of IBM DB2 10 for z/OS Paolo Bruni,Marcelo Antonelli,Hyun Baek,Rick Butler,Ernie Mancill,IBM Redbooks,2011-09-14 IBM DB2 9 and 10 for z OS have added functions in the areas of security regulatory compliance and audit capability that provide solutions for the most compelling requirements DB2 10 enhances the DB2 9 role based security with additional administrative and other finer grained authorities and privileges This authority granularity helps separate administration and data access that provide only the minimum appropriate authority The authority profiles provide better separation of duties while limiting or eliminating blanket authority over all aspects of a table and its data In addition DB2 10 provides a set of criteria for auditing for the possible abuse and overlapping of authorities within a system In DB2 10 improvements to security and regulatory compliance focus on data retention and protecting sensitive data from privileged users and administrators Improvements also help to separate security administration from database administration DB2 10 also lets administrators enable security on a particular column or particular row in the database complementing the privilege model This IBM Redbooks publication provides a detailed description of DB2 10 security functions from the implementation and usage point of view It is intended to be used by database audit and security administrators **Managing IBM DB2 10 for z/OS Using the IBM DB2 Administration Tool for z/OS Version 10** Paolo Bruni,Tom Crocker,Elaine Morelli,Richard Schaufuss,Jane Yang,IBM Redbooks,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. [Data Studio and DB2 for z/OS Stored Procedures](#) Paolo Bruni, Marichu Scanlon, IBM Redbooks, 2011-03-15. Stored procedures can provide major benefits in the areas of application performance, code reuse, security, and integrity. DB2 has offered ever-improving support for developing and operating stored procedures. This IBM Redpaper™ 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. **Managing DB2 for z/OS Utilities with DB2 Tools Solution Packs** Paolo Bruni, Carlos Alberto Gomes da Silva Junior, Craig McKellar, Adilet Sabyrbaev, Tim Willging, IBM Redbooks, 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

**Streamline Business with Consolidation and Conversion to DB2 for z/OS** Paolo Bruni, Marcos Caurim, Elise Gotay, Susan Lawson, Glenn McGeoch, Rebecca Poole, IBM Redbooks, 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

*Subsystem and Transaction Monitoring and Tuning with DB2 11 for z/OS* Paolo Bruni, Felipe Bortoletto, Adrian Burke, Cathy Drummond, Yasuhiro Ohmori, IBM Redbooks, 2022-08-31 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

*DB2 10 for Z/OS ,2010*

**Improving z/OS Application Availability by Managing Planned Outages** Frank Kyne, Andy Clifton, Justin Deane, Fernando Ferreira, Richard Gunjal, Chuck Laurent, John Papp, Judy Ruby-Brown, Maida Snapper, Michael Stephen, Dave Viguers, Marna Walle, Yvonne Zemotel, IBM Redbooks, 2014-12-22 This IBM Redbooks publication is intended to make System Programmers Operators and Availability Managers aware of the enhancements to recent releases of IBM z OS and its major subsystems in the area of planned outage avoidance It is a follow on to rather than a replacement for z OS Planned Outage Avoidance Checklist SG24 7328 Its primary objective is to bring together in one place information that is already available but widely dispersed It also presents a different perspective on planned outage avoidance Most businesses care about application availability rather than the availability of a specific system Also a planned outage is not necessarily a bad thing if it does not affect application availability In fact running for too long without an IPL or

subsystem restart might have a negative impact on application availability because it impacts your ability to apply preventive service Therefore this book places more focus on decoupling the ability to make changes and updates to your system from IPLing or restarting your systems

*z/OS Identity Propagation* Karan Singh,Rogério Camargo,Simon Dodge,Bob McCormack,Alain Roessle,Martina Schmidt,Ruben Thumbiran,Phil Wakelin,Nigel Williams,IBM Redbooks,2011-09-29 This IBM Redbooks publication explores various implementations of z OS Identity Propagation where the distributed identity of an end user is passed to z OS and used to map to a RACF user ID and any related events in the audit trail from RACF show both RACF and distributed identities This book describes the concept of identity propagation and how it can address the end to end accountability issue of many customers It describes at a high level what identity propagation is and why it is important to us It shows a conceptual view of the key elements necessary to accomplish this This book provides details on the RACMAP function filter management and how to use the SMF records to provide an audit trail In depth coverage is provided about the internal implementation of identity propagation such as providing information about available callable services This book examines the current exploiters of z OS Identity Propagation and provide several detailed examples covering CICS with CICS Transaction Gateway DB2 and CICS Web services with Datapower

*DB2 for z/OS and WebSphere Integration for Enterprise Java Applications* Paolo Bruni,Zhen Hua Dong,Josef Klitsch,Maggie Lin,Rajesh Ramachandran,Bart Steegmans,Andreas Thiele,IBM Redbooks,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

**Reliability and Performance with IBM DB2 Analytics Accelerator V4.1** Paolo Bruni,Jason Arnold,Leticia Cruz,Jeff Feinsmith,Willie Favero,Anna Griner,James Guo,Chris Harlander,Johannes Kern,Ravi Kumar,Ruiping Li,Andy Perkins,Jonathan Sloan,Steve Speller,Dino Tonelli,IBM Redbooks,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 PureData™ 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 IBM IMS Version 12 Technical Overview Paolo Bruni, Isabelle Bruneel, Angie Greenhaw, Dougie Lawson, Jorge Alberto Luz Ribeiro, Egide Van Aershot, IBM Redbooks, 2011-10-25 IBM Information Management System IMSTM provides leadership in performance reliability and security to help you implement the most strategic and critical enterprise applications IMS also keeps pace with the IT industry IMS Enterprise Suite 2 1 and IMS Tools continue to evolve to provide value and meet the needs of enterprise customers With IMS 12 integration and open access improvements provide flexibility and support business growth requirements Manageability enhancements help optimize system staff productivity by improving ease of use and autonomic computing facilities and by providing increased availability Scalability improvements have been made to the well known performance efficiency availability and resilience of IMS by using 64 bit storage IBM IMS Enterprise Suite for z OS V2 1 components enhance the use of IMS applications and data In this release components either orderable or downloaded from the web deliver innovative new capabilities for your IMS environment They enhance connectivity expand application development extend standards and tools for a service oriented architecture SOA ease installation and provide simplified interfaces This IBM Redbooks publication explores the new features of IMS 12 and Enterprise Suite 2 1 and provides an overview of the IMS tools In addition this book highlights the major new functions and facilitates database administrators in their planning for installation and migration

**Optimizing System z Batch Applications by Exploiting Parallelism** Martin Packer, Dean Harrison, Karen Wilkins, IBM Redbooks, 2014-08-21 This IBM Redpaper™ publication shows you how to speed up batch jobs by splitting them into near identical instances sometimes referred to as It is a practical guide which is based on the authors testing experiences with a batch job that is similar to those jobs that are found in customer applications This guide documents the issues that the team encountered and how the issues were resolved The final tuned implementation produced better results than the initial traditional implementation Because job splitting often requires application code changes this guide includes a description of some aspects of application modernization you might consider if you must modify your application The authors mirror the intended audience for this paper because they are specialists in IBM DB2 IBM Tivoli Workload Scheduler for z OS

and z OS batch performance

### **Risk Scoring for a Loan Application on IBM System z: Running IBM SPSS**

**Real-Time Analytics** Mike Ebberts, Keith Doan, Andrew Flatt, IBM Redbooks, 2013-10-02 When ricocheting a solution that involves analytics the mainframe might not be the first platform that comes to mind. However, the IBM System z group has developed some innovative solutions that include the well-respected mainframe benefits. This book describes a workshop that demonstrates the use of real-time advanced analytics for enhancing core banking decisions using a loan origination example. The workshop is a live hands-on experience of the entire process from analytics modeling to deployment of real-time scoring services for use on IBM z OS. In this IBM Redbooks publication, we include a facilitator guide chapter as well as a participant guide chapter. The facilitator guide includes information about the preparation such as the needed material resources and steps to set up and run this workshop. The participant guide shows step-by-step the tasks for a successful learning experience. The goal of the first hands-on exercise is to learn how to use IBM SPSS Modeler for Analytics modeling. This provides the basis for the next exercise: Configuring risk assessment in SPSS Decision Management. In the third exercise, the participant experiences how real-time scoring can be implemented on a System z. This publication is written for consultants, IT architects, and IT administrators who want to become familiar with SPSS and analytics solutions on the System z.

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## **Table of Contents Db2 10 For Zos Technical Overview**

1. Understanding the eBook Db2 10 For Zos Technical Overview
  - The Rise of Digital Reading Db2 10 For Zos Technical Overview
  - Advantages of eBooks Over Traditional Books
2. Identifying Db2 10 For Zos Technical Overview
  - Exploring Different Genres
  - Considering Fiction vs. Non-Fiction
  - Determining Your Reading Goals
3. Choosing the Right eBook Platform
  - Popular eBook Platforms
  - Features to Look for in an Db2 10 For Zos Technical Overview
  - User-Friendly Interface
4. Exploring eBook Recommendations from Db2 10 For Zos Technical Overview
  - Personalized Recommendations
  - Db2 10 For Zos Technical Overview User Reviews and Ratings
  - Db2 10 For Zos Technical Overview and Bestseller Lists
5. Accessing Db2 10 For Zos Technical Overview Free and Paid eBooks
  - Db2 10 For Zos Technical Overview Public Domain eBooks
  - Db2 10 For Zos Technical Overview eBook Subscription Services

- Db2 10 For Zos Technical Overview Budget-Friendly Options
- 6. Navigating Db2 10 For Zos Technical Overview eBook Formats
  - ePub, PDF, MOBI, and More
  - Db2 10 For Zos Technical Overview Compatibility with Devices
  - Db2 10 For Zos Technical Overview Enhanced eBook Features
- 7. Enhancing Your Reading Experience
  - Adjustable Fonts and Text Sizes of Db2 10 For Zos Technical Overview
  - Highlighting and Note-Taking Db2 10 For Zos Technical Overview
  - Interactive Elements Db2 10 For Zos Technical Overview
- 8. Staying Engaged with Db2 10 For Zos Technical Overview
  - Joining Online Reading Communities
  - Participating in Virtual Book Clubs
  - Following Authors and Publishers Db2 10 For Zos Technical Overview
- 9. Balancing eBooks and Physical Books Db2 10 For Zos Technical Overview
  - Benefits of a Digital Library
  - Creating a Diverse Reading Collection Db2 10 For Zos Technical Overview
- 10. Overcoming Reading Challenges
  - Dealing with Digital Eye Strain
  - Minimizing Distractions
  - Managing Screen Time
- 11. Cultivating a Reading Routine Db2 10 For Zos Technical Overview
  - Setting Reading Goals Db2 10 For Zos Technical Overview
  - Carving Out Dedicated Reading Time
- 12. Sourcing Reliable Information of Db2 10 For Zos Technical Overview
  - Fact-Checking eBook Content of Db2 10 For Zos Technical Overview
  - Distinguishing Credible Sources
- 13. Promoting Lifelong Learning
  - Utilizing eBooks for Skill Development
  - Exploring Educational eBooks
- 14. Embracing eBook Trends

- Integration of Multimedia Elements
- Interactive and Gamified eBooks

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