

## Db2 11 For Z Os Database Administration Ebook777

IBM® Information Management System (IMSTM) provides leadership in performance, reliability, and security to help you implement the most strategic and critical enterprise applications. IMS, IMS utilities, 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. Scalability improvements have been made to the well-known performance, efficiency, availability, and resilience of IMS by using 64-bit storage. In this IBM Redbooks® publication we provide IMS performance monitoring and tuning information by describing the key IMS performance functions and by showing how to monitor and tune them with traditional and new strategic applications. This book is for database administrators and system programmers. We summarize methods and tools for monitoring and tuning IMS systems, describe IMS system-wide performance, database, and transaction considerations. Based on lab measurements, we provide information about recent performance enhancements that are available with IMS 12, and advice about setting performance-related parameters.

Essential information about early customer experiences, migration advice, and performance specifics from IBM experts directly involved in the development of DB2 11 Building on the previously published DB2 11: The Database for Big Data and Analytics, this book is particularly for new and existing DB2 for z/OS customers and users who want to learn as much as they can about the new software version before migrating their organizations to DB2 11 for z/OS. The guide begins with a technical overview of DB2 11 features and explains how the new functions in DB2 11 can help enterprise customers address the challenges they face with the explosion of data and information. There has been rapid growth in the variety, volume, and velocity of data due to the increase of smart devices, mobile applications, cloud computing, and social media, and many of the enhancements in DB2 11 are focused on enabling enterprise customers to respond to these market opportunities in a cost-effective way. The book includes a detailed discussion for helping customers plan their DB2 11 migration strategy, and shares experiences of people who have already upgraded to DB2 11 and participated in IBM's Early Support Program. A third section of the book addresses one of the most common obstacles that prevents customers from migrating to a new release: the need to implement any code changes required due to application incompatibilities. With DB2 11's "application compatibility" support, such applications can continue to run under the new release until those changes can be implemented, removing them as an upgrade dependency. This book provides an in-depth review of the skills required to pass IBM's DB2 11 for z/OS System Administration exam 317 certification exam. This book addresses the changes in this new release of the DB2 11 for z/OS System Administration certification test, specifically for the latest version of DB2 for z/OS,

version 11. Each section of the exam addresses a detailed set of skills that a DB2 system administrator on DB2 11 for z/OS should have. This book takes those sections, chapter by chapter, and provides the information a DB2 for z/OS system administrator will need to know to pass the certification exam. Practice questions and answers follow each chapter. A new practice final exam has been added to the book. The reader will come away being fully prepared to pass exam 317 and acquire certification, an important milestone showing significant academic and/or professional achievement.

The accompanying CD-ROM contains source code, DB2 product documentation, and a complete trial version of DB2 Enterprise Server Edition for Windows version 8.2.

IBM DB2 11 for z/OS focuses on CPU savings and performance improvement through innovations within DB2 and the synergy with IBM System z hardware and software. Most of CPU reductions are built in directly to DB2, requiring no application changes. Enhancements often take effect after the REBIND in the case of static applications, while some enhancements require user actions such as Data Definition Language (DDL) updates. This IBM Redbooks publication provides the details of the performance of DB2 11 for z/OS, discussing the possible performance impacts of the most important functions when migrating from DB2 10. It includes performance measurements made in the Silicon Valley Laboratory and provide considerations and high-level estimates. It assumes familiarity with DB2 11 for z/OS. --

This book will help you learn the basic and intermediate skills you need to write applications with DB2 11 for z/OS. The instruction, examples and questions/answers in this book are a fast track to becoming productive as quickly as possible. The content is easy to read and digest, well organized and focused on honing real job skills. DB2 11 for z/OS Developer Training and Reference Guide is a key step in the direction of mastering DB2 application development so you'll be ready to perform on a technical DB2 development team.

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 autonomics, 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.

The Definitive Solutions-Oriented Guide to IBM® DB2® for z/OS®: Now Fully Updated for Both v9 and v10! The largest database tuning performance gains can often be obtained from tuning application code, and applications that use SQL to retrieve data are the best candidates for tuning. This well-organized, easy-to-understand reference brings together more than 100 SQL-related skills and techniques that any developer can use to build and optimize DB2 applications for consistently superior performance. DB2 tuning expert Tony Andrews (“Tony the Tuner”) draws on more than 20 years of DB2-related experience, empowering you to take performance into your own hands, whether you’re writing new software or tuning existing systems. Tony shows you exactly how to clear bottlenecks, resolve problems, and improve both speed and reliability. This book fully reflects the latest SQL programming best practices for DB2 V9 and DB2 V10 on z/OS: techniques that are taught in no other book and are rarely covered in general DB2 SQL courses. Drawing on his extensive consulting experience and highly praised training with Themis Inc., Tony also presents practical checklists and an invaluable 15-step methodology for optimizing virtually any DB2 application. Coverage includes Empowering developers on knowing what to do and where to look in resolving performance problems in queries or programs Providing many programming and SQL coding examples Establishing standards and guidelines that lead to high-performance SQL Implementing time-efficient code walkthroughs to ensure that your standards are followed Focusing on the small number of SQL statements that consume the most resources Identifying simple solutions that deliver the most sizable benefits Optimizing performance by rewriting query predicates more efficiently Providing a better understanding of SQL optimization and Runstat statistics Recognizing opportunities to tweak your code more effectively than the Optimizer Optimizing SQL code with COBOL applications Efficiently checking for the existence of data, rows, or tables Using Runstats’ newest capabilities to consistently optimize paths to data

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.

As IBM® continues to enhance the functionality, performance, and availability of IBM Db2®,

the utilities have made significant strides towards self-management. IBM Db2 for z/OS utilities is leading the trend towards autonomies. During the last couple of versions of Db2 for z/OS, and through the maintenance stream, new features and enhancements have been delivered to further improve the performance and functionality of the Db2 utilities. The intent of this IBM Redpaper™ publication is to help Db2 Database Administrators, Db2 System Programmers, and anyone who runs Db2 for z/OS utilities implement best practices. The intent of this paper is not to replicate the Db2 for z/OS Utilities Reference Guide or the Db2 for z/OS Installation Guide. This paper describes and informs you how to apply real-life practical preferred practices for the IBM Db2 for z/OS Utilities Suite. The paper concentrates on the enhancements provided by Db2 utilities, regardless of the version, albeit some functions and features are available only in Db2 12 for IBM z/OS®.

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.

Written primarily for database administrators who work on z/OS and who are taking the IBM DB2 11 for z/OS Database Administration certification exam (Exam 312), this resource also appeals to those who simply want to master the skills needed to be an effective database administrator of z/OS mainframes. This study guide is designed to provide those seeking certification with an intense overview of DB2 11 for z/OS and all topics covered on the exam. Sample questions are provided at the end of each chapter, along with answers and explanations.

IBM® DB2® buffer pools are still a key resource for ensuring good performance. This has become increasingly important as the difference between processor speed and disk response time for a random access I/O widens in each new generation of processor. An IBM System z® processor can be configured with large amounts of storage, which if used wisely, can help compensate by using storage to avoid synchronous I/O. Several changes in buffer pool management have been provided by DB2 10 and DB2 11. The purpose of this IBM Redpaper™ is to cover the following topics: Describe the functions of the DB2 11 buffer pools Introduce a number of matrixes for read and write performance of a buffer pool Provide information about how to set up and monitor the DB2 buffer pools The paper is intended to be read by DB2 system administrators, but it might be of interest to any IBM z/OS® performance specialist. It is assumed that the reader is familiar with DB2 and performance tuning. In this paper, we also assume that you are familiar with DB2 11 for z/OS performance. See DB2 11 for z/OS Technical Overview, SG24-8180; and DB2 11 for z/OS Performance Topics, SG24-8222, for more information about DB2 11 functions and their performance.

This book will teach you the basic information and skills you need to develop applications with the COBOL programming language on IBM mainframe computers running z/OS. The instruction, examples and sample programs in this book are a fast track to becoming productive with COBOL as quickly as possible. The coverage includes COBOL with VSAM, IMS, DB2 and CICS. The content of this book is easy to read and digest, well organized and focused on honing real job skills. Acquiring these skills is a key step in mastering COBOL application development so you'll be ready to perform effectively on an application development team.

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.

DB2 11 for z/OS Technical Overview IBM Redbooks

This book will help you learn the basic information and skills you need to develop applications with DB2 11 for z/OS. The instruction, examples and questions/answers in this book are a fast track to becoming productive as quickly as possible. The content is easy to read and digest, well organized and focused on honing real job skills. DB2 11 for z/OS Basic Training for Application Developers is a key step in the direction of mastering DB2 application development so you'll be ready to join a technical team. 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.

There has been a considerable focus on performance improvements as one of the main themes in recent IBM DB2® releases, and DB2 12 for IBM z/OS® is certainly no exception. With the high-value data retained on DB2 for z/OS and the z Systems platform, customers are increasingly attempting to extract value from that data for

competitive advantage. Although customers have historically moved data off platform to gain insight, the landscape has changed significantly and allowed z Systems to again converge operational systems with analytics for real-time insight. Business-critical analytics is now requiring the same levels of service as expected for operational systems, and real-time or near real-time currency of data is expected. Hence the resurgence of z Systems. As a precursor to this shift, IDAA brought the data warehouse back to DB2 for z/OS and, with its tight integration with DB2, significantly reduces data latency as compared to the ETL processing that is involved with moving data to a stand-alone data warehouse environment. That change has opened up new opportunities for operational systems to extend the breadth of analytics processing without affecting the mission-critical system and integrating near real-time analytics within that system, all while maintaining the same z Systems qualities of service. Apache Spark on z/OS and Linux for System z also allow analytics in-place, in real-time or near real-time. Enabling Spark natively on z Systems reduces the security risk of multiple copies of the Enterprise data, while providing an application developer-friendly platform for faster insight in a simplified and more secure analytics framework. How is all of this relevant to DB2 for z/OS? Given that z Systems is proving again to be the core Enterprise Hybrid Transactional/Analytical Processing (HTAP) system, it is critical that DB2 for z/OS can handle its traditional transactional applications and address the requirements for analytics processing that might not be candidates for these rapidly evolving targeted analytics systems. And not only are there opportunities for DB2 for z/OS to play an increasing role in analytics, the complexity of the transactional systems is increasing. Analytics is being integrated within the scope of those transactions. DB2 12 for z/OS has targeted performance to increase the success of new application deployments and integration of analytics to ensure that we keep pace with the rapid evolution of IDAA and Spark as equal partners in HTAP systems. This paper describes the enhancements delivered specifically by the query processing engine of DB2. This engine is generally called the optimizer or the Relational Data Services (RDS) components, which encompasses the query transformation, access path selection, run time, and parallelism. DB2 12 for z/OS also delivers improvements targeted at OLTP applications, which are the realm of the Data Manager, Index Manager, and Buffer Manager components (to name a few), and are not identified here. Although the performance measurement focus is based on reducing CPU, improvement in elapsed time is likely to be similarly achieved as CPU is reduced and performance constraints alleviated. However, elapsed time improvements can be achieved with parallelism, and DB2 12 does increase the percentage offload for parallel child tasks, which can further reduce chargeable CPU for analytics workloads.

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.

- This is the latest practice test to pass the C2090-320 IBM DB2 11 Fundamentals for z/OS Exam. - It contains 123 Questions and Answers. - All the questions are 100% valid and stable. - You can reply on this practice test to pass the exam with a good mark and in the first attempt.

This IBM® Redpaper™ publication provides key information about continuous delivery in IBM Db2® 12 for z/OS®. It discusses how continuous delivery works and the changes that have been made in Db2 12 to support continuous delivery, such as adding a new catalog table and changing existing catalog tables. Also the paper covers the effects on applications and how to take advantage of new function provided using the continuous delivery model.

This certification exam certifies that the successful candidate has important knowledge, skills, and abilities necessary to describe the architecture and administer the processes required to plan, install, manage, tune and secure DB2 for z/OS environments.

Proliferation of mobile and other network-connected devices is driving increases in:

- transaction workloads
- data volumes
- 24x7 requirements
- Continued focus on cost containment and resource efficiency
- Competitive pressures continue to drive an increasing need for innovation, analytics, and data integration

DB2 for z/OS has leading edge capabilities to support these requirements and DB2 11 makes important improvements

- Out-of-the-box CPU Savings
- Improving efficiency, reducing costs, no application changes
- Up to 10% for complex OLTP
- Up to 10% for update intensive batch
- Up to 40% for queries
- Additional performance improvements through use of new DB2 11 features
- Enhanced Resiliency and Continuous Availability
- Making more online changes without affecting applications
- Online REORG improvements, less disruption
- DROP COLUMN, online change of partition limit keys
- Extended log record addressing capacity - 1 yottabyte (or 1B petabytes)
- BIND/REBIND, DDL break into persistent threads
- Enhanced business analytics
- Expanded SQL, XML capabilities
- Temporal and SQLPL enhancements
- Transparent archiving
- Hadoop integration, NoSQL and JSON support
- Simpler, faster DB2 version upgrades
- No application changes required for DB2 upgrade
- Access path stability improvements

IBM® continues to enhance the functionality, performance, availability, and ease of use

of IBM DB2® utilities. This IBM Redbooks® publication is the result of a project dedicated to the current DB2 Version 9 Utilities Suite product. It provides information about introducing the functions that help set up and invoke the utilities in operational scenarios, shows how to optimize concurrent execution of utilities and collect information for triggering utilities execution, and provides considerations about partitioning. It also describes the new functions provided by several utilities for SHARE LEVEL CHANGE execution, which maximize availability and the exploitation of DFSMS constructs by the BACKUP and RESTORE SYSTEM utilities. This book concentrates on the enhancements provided by DB2 UDB for z/OS Version 8 and DB2 for z/OS Version 9. It implicitly assumes a basic level of familiarity with the utilities provided by DB2 for z/OS and OS/390® Version 7.

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

The Easy, Visual Introduction to IBM DB2 Version 10.5 for Linux, UNIX, and Windows Foreword by Judy Huber, Vice President, Distributed Data Servers and Data Warehousing; Director, IBM Canada Laboratory This book covers everything you need to get productive with the latest version of IBM DB2 and apply it to today's business challenges. It discusses key features introduced in DB2 Versions 10.5, 10.1, and 9.7, including improvements in manageability, integration, security, Big Data support, BLU Acceleration, and cloud computing. DB2 Essentials illuminates key concepts with examples drawn from the authors' extensive experience with DB2 in enterprise environments. Raul F. Chong and

Clara Liu explain how DB2 has evolved, what's new, and how to choose the right products, editions, and tools. Next, they walk through installation, configuration, security, data access, remote connectivity, and day-to-day administration. Each chapter starts with an illustrative overview to introduce its key concepts using a big picture approach. Clearly explained figures are used extensively, and techniques are presented with intuitive screenshots, diagrams, charts, and tables. Case studies illustrate how "theory" is applied in real-life environments, and hundreds of review questions help you prepare for IBM's newest DB2 certification exams. Coverage includes

- Understanding the role of DB2 in Big Data
- Preparing for and executing a smooth installation or upgrade
- Understanding the DB2 environment, instances, and databases
- Configuring client and server connectivity
- Working with database objects
- Getting started with BLU Acceleration
- Implementing security: authentication and authorization
- Understanding concurrency and locking
- Maintaining, backing up, and recovering data
- Using basic SQL in DB2 environments
- Diagnosing and solving DB2 problems

This book is for anyone who plans to work with DB2, including DBAs, system administrators, developers, and consultants. It will be a great resource whether you're upgrading from an older version of DB2, migrating from a competitive database, or learning your first database platform.

DB2® packages were introduced with DB2 V2.3 in 1993. During the 15 years that have elapsed, a lot has changed. In particular, there is a more widespread use of distributed computing, Java™ language, new tools, and upgrades in the platform software and hardware. The best practices back then just might not be optimal today. In this IBM® Redbooks® publication, we take a fresh look at bringing packages into the 21st century. We begin with an overview of packages and explain the advantages of using packages. Because database request module (DBRM) based plans have been deprecated in DB2 9, you need to convert to packages if you did not use packages already. We provide guidance on using a DB2 provided function to convert from DBRM-based plans to packages. We re-examine the application development frameworks for packages: program preparation, package setup, and execution. For distributed applications, we include a discussion of a utility to identify and remove deprecated private protocol and converting to DRDA® as well as an introduction to the new pureQuery function of Data Studio. We also discuss common problems and their resolutions. We then explore administration and operational activities dealing with packages, including security, access path management (where we discuss the newly introduced package stability feature to allow for a seamless fallback), and management and performance aspects. The appendixes include useful queries and mention tools for managing packages effectively.

Mastering material for dealing with DBA certification exams  
 Key Features  
 Prepare yourself for the IBM C2090-600 certification exam  
 Cover over 50 Db2 procedures including database design, performance, and security  
 Work through over 150 Q&As to gain confidence on each topic  
 Book Description IBM Db2 is a

relational database management system (RDBMS) that helps you store, analyze, and retrieve data efficiently. This comprehensive book is designed to help you master all aspects of IBM Db2 database administration and prepare you to take and pass IBM's Certification Exams C2090-600. Building on years of extensive experience, the authors take you through all areas covered by the test. The book delves deep into each certification topic: Db2 server management, physical design, business rules implementation, activity monitoring, utilities, high availability, and security. IBM Db2 11.1 Certification Guide provides you with more than 150 practice questions and answers, simulating real certification examination questions. Each chapter includes an extensive set of practice questions along with carefully explained answers. This book will not just prepare you for the C2090-600 exam but also help you troubleshoot day-to-day database administration challenges. What you will learn Configure and manage Db2 servers, instances, and databases Implement Db2 BLU Acceleration and a DB2 pureScale environment Create, manage, and alter Db2 database objects Use the partitioning capabilities available within Db2 Enforce constraint checking with the SET INTEGRITY command Utilize the Db2 problem determination (db2pd) and dsmtop tools Configure and manage HADR Understand how to encrypt data in transit and at rest Who this book is for The IBM Db2 11.1 Certification Guide is an excellent choice for database administrators, architects, and application developers who are keen to obtain certification in Db2. Basic understanding of Db2 is expected in order to get the most out of this guide.

The requirements for a database management system (DBMS) have included support for very large and complex data objects. DB2 UDB for OS/390 Version 6 introduced the support for large objects (LOBs): they can contain text documents, images, or movies, and can be stored directly in the DBMS with sizes up to 2 gigabytes per object and 65,536 TB for a single LOB column in a 4,096 partition table. The introduction of these new data types has implied some changes in the administration processes and programming techniques. The book Large Objects with DB2 for z/OS and OS/390, SG24-6571, introduced and described the usage of LOBs with DB2 for z/OS at Version 7 level. Major enhancements for LOB manipulation have been introduced with DB2 UDB for z/OS Version 8 and DB2 Version 9.1 for z/OS (DB2 9 in this book). These enhancements include performance functions such as the avoidance of LOB locks and DRDA LOB flow optimization, usability functions such as file reference variables, FETCH CONTINUE, and the automatic creation of objects. DB2 utilities provide integrated support with LOAD and UNLOAD, Cross Loader, REORG, CHECK DATA, and CHECK LOB. In this IBM Redbooks publication, we provide a totally revised description of the DB2 functions for LOB support as well as useful information about how to design and implement LOBs. We also offer examples of their use, programming considerations, and the enhanced processes used for their administration and maintenance. We also detail how SAP solutions use LOBs. This book replaces the previous book, Large Objects with DB2 for z/OS

and OS/390, SG24-6571, for DB2 Version 8 and Version 9.1. Please note that the additional material referenced in the text is not available from IBM.

Marketshare for DB2 has been growing steadily over the past 5 years and with the announcement of DB2 Universal Database V8 (T-Rex), the product has never had more momentum. DB2 owns about 30 percent of the database market--the same as Oracle. Not only is the product used in many Fortune 500 companies, but it is becoming very popular in small to medium sized businesses as well. This book provides the reader with a comprehensive reference and research tool for DB2 for the mainframe. Official material is awkwardly written, spans over a dozen manuals in PDF format, and lacks real-world guidance. Author, Craig Mullins, consistently hears from readers of past editions that they rely on this book as their primary reference for DB2. Craig Mullins is constantly being asked when it will support a new release.

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.

This IBM Redpaper publication describes the functions of the DB2 11 buffer pool; introduces a number of matrixes for read and write performance of a buffer pool; and provides information about how to set up and monitor the DB2 buffer pools. The paper is intended to be read by DB2 system administrators, but it might be of interest to any IBM z/OS performance specialist. It is assumed that the reader is familiar with DB2 and performance tuning. --

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.

This book will help you pass IBM Exam C2090-313 and become an IBM Certified Application Developer - DB2 11 for z/OS. The instruction, examples and questions/answers in the book offer you a significant advantage by helping you to gauge your readiness for the exam, to better understand the objectives being tested, and to get a broad exposure to the DB2 11 knowledge you'll be tested on.

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. The goal of this IBM® Redbooks® publication is to demonstrate the ability to perform single click automated deployments of multi-platform applications that include IBM Db2 for z/OS database schema changes by using the capabilities of IBM Db2 DevOps Experience for z/OS. Pushing the application and database code changes to a source control management system (SCM) triggers a single CI/CD pipeline execution for application and database changes. Therefore, it mitigates the dependency on the DBA to deploy those database changes in a separate process. At the same time, DBAs can safeguard the integrity of their organization's data by implementing site rules in Db2 DevOps Experience. DBAs define whether a schema change can be approved automatically after all site rules are satisfied or whether it must be approved manually. In this publication, we e provide an overview of the CI/CD pipeline architecture in the

context of a sample application. We also describe the steps that are relevant to the roles of the DevOps engineer who implements the enterprise CI/CD pipeline, the DBA who is responsible for database code changes in Db2 for z/OS and for defining site rules that ensure quality in production, and the application developer who changes the application code and communicates requirements for changes in the database schema. This IBM® Redbooks® publication is based on the book Introduction to the New Mainframe: z/OS Basics, SG24-6366, which was produced by the International Technical Support Organization (ITSO), Poughkeepsie Center. It provides students of information systems technology with the background knowledge and skills necessary to begin using the basic facilities of a mainframe computer. For optimal learning, students are assumed to have successfully completed an introductory course in computer system concepts, such as computer organization and architecture, operating systems, data management, or data communications. They should also have successfully completed courses in one or more programming languages, and be PC literate. This textbook can also be used as a prerequisite for courses in advanced topics, or for internships and special studies. It is not intended to be a complete text covering all aspects of mainframe operation. It is also not a reference book that discusses every feature and option of the mainframe facilities. Others who can benefit from this course include experienced data processing professionals who have worked with non-mainframe platforms, or who are familiar with some aspects of the mainframe but want to become knowledgeable with other facilities and benefits of the mainframe environment. As we go through this course, we suggest that the instructor alternate between text, lecture, discussions, and hands-on exercises. Many of the exercises are cumulative, and are designed to show the student how to design and implement the topic presented. The instructor-led discussions and hands-on exercises are an integral part of the course, and can include topics not covered in this textbook. In this course, we use simplified examples and focus mainly on basic system functions. Hands-on exercises are provided throughout the course to help students explore the mainframe style of computing. At the end of this course, you will be familiar with the following information: Basic concepts of the mainframe, including its usage and architecture Fundamentals of IBM z/VSE® (VSE), an IBM zTM Systems entry mainframe operating system (OS) An understanding of mainframe workloads and the major middleware applications in use on mainframes today The basis for subsequent course work in more advanced, specialized areas of z/VSE, such as system administration or application programming

This book will help you pass IBM Exam C2090-616 and become an IBM Certified Database Associate (DB2 11.1 for Linux, Unix and Windows). The questions and answers in the book offer you a significant advantage by helping you to gauge your readiness for the exam, to better understand the objectives being tested, and to get a broad exposure to the knowledge you'll be tested on.

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