

# Introduction

## IBM DB2 11: The Database for Big Data and Critical Business Analytics

by Surekha Parekh

I joined the DB2 business in 2008, just after the launch of IBM® DB2 9 for z/OS®. A lot has changed in the World of Data since then. In fact, a lot has changed in the world of business and information technology—and the changes are going to continue.

There has been an enormous explosion of data: 90 percent of the world's data has been created over the past two years!<sup>1</sup> We have also seen a rapid growth in the volume, variety, and velocity of data due to the explosion of smart devices, mobile applications, cloud computing, and social media. New technology innovations, hunger for data, and the thirst for business analytics signal that we are entering a new era of computing—**Smarter Computing**—the **era of Insight for Discovery**.

Every second<sup>2</sup>, there are. . .

- 684,478 items shared on Facebook
- 100,000 tweets
- 2 million Google search queries
- 1 new member joining LinkedIn
- 58 hours of video uploaded to YouTube

Much of this data growth has been in unstructured data; however, IDC estimates that by 2020, business transactions on the Internet—business-to-business and business-to-consumer—will reach **450 billion per day**<sup>3</sup>. This phenomenon of data explosion is called **big data**, and smart organizations are looking for innovative ways to collect, analyze, and turn this data into actionable insights and make predictions.

Big data is changing our world, the world of our children. Can you imagine a world where you can predict chronic illnesses such as cancer, heart disease, Parkinson's disease, and diabetes before they happen? That is the world at our fingertips. Through the analysis of these data mountains, it will become possible not only to analyze critical illnesses before they occur but to improve business efficiencies. Every industry, every organization, every government, and every individual will be impacted by this data revolution. Innovative companies know that software is the way not only to improve business efficiencies but also to differentiate products and services from the competition and survive.

**Big data** is of particular concern when it comes to information security because it puts private information at risk. The cost per incident for a security breach is on average \$5.4M<sup>4</sup>. Today's organizations are challenged to ensure that their business data is secure. According to IBM, more than 80 percent of corporate data resides on mainframes, and common estimates suggest that 85 percent of all business transactions are processed by mainframes today<sup>5</sup>. This positions DB2 11 for z/OS as the ideal database for big data and critical analytics in the new era of computing. It is the only proven, secure, and cost-effective platform trusted by top banks, insurance companies, and retailers.

The objective of this book is to give our customers insight into DB2 11, which was announced on October 1, 2013. Everyone is talking about DB2 11. Many of our Early Support Program customers have been testing this product and are seeing some incredible results! Our customers and business partners around the world are very enthusiastic.

So what's new in DB2 11 that is causing so much excitement? Here is a quick summary of some of the exciting new features and business benefits of DB2 11, about which this book will give you deeper insight:

- Even more out-of-the-box CPU savings
  - 10 percent complex OLTP
  - 10 percent update intensive batch
  - 40 percent queries
  - 25 percent uncompressed tables and 40% compressed tables
- Enhanced resiliency
  - Fewer planned outages, fewer REORGs, faster recovery
  - Cost-effective archiving, access warm/cold data in single query
- Business-critical analytics
  - DB2 Analytics Accelerator performance enhancements
  - Big data integration
  - In-transaction real-time scoring
  - Advanced QMF analytic capabilities with mobile support
- Simpler, faster upgrades for faster ROI
  - 16x faster catalog migration
  - Protection from incompatible changes
  - Repeatable testing with real workloads and integrated cloning

The book is segmented into two parts. The first part is all about the business value of DB2 11 for z/OS and explains the unmatched efficiency for big data and analytics. This section also includes short papers on the DB2 11 Optimizer and the business value of IBM tools and utilities. The second section focuses more on DB2 and System z<sup>®</sup> and how

DB2 for z/OS can reduce the total cost of ownership for organizations. With the enormous explosion of data, this is more critical now than ever before.

We hope you find this book as valuable as our previous versions. Many thanks.

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**Notes**

1. Dan Vesset et al. *Worldwide Big Data Technology and Services 2012–2015 Forecast* (IDC, March 7, 2012).
2. 2013 digital statistics from MistMedia, Dublin, Ireland.
3. David Reinsel and John Gantz. *The Digital Universe in 2020: Big Data, Bigger Digital Shadows, and Biggest Growth in the Far East* (IDC, December 2012).
4. Ponemon Institute, annual data breach report, June 2013.
5. <http://www.memorableurl.com/2012/11/whats-next-cloud-applications-on-a-mainframe.html>