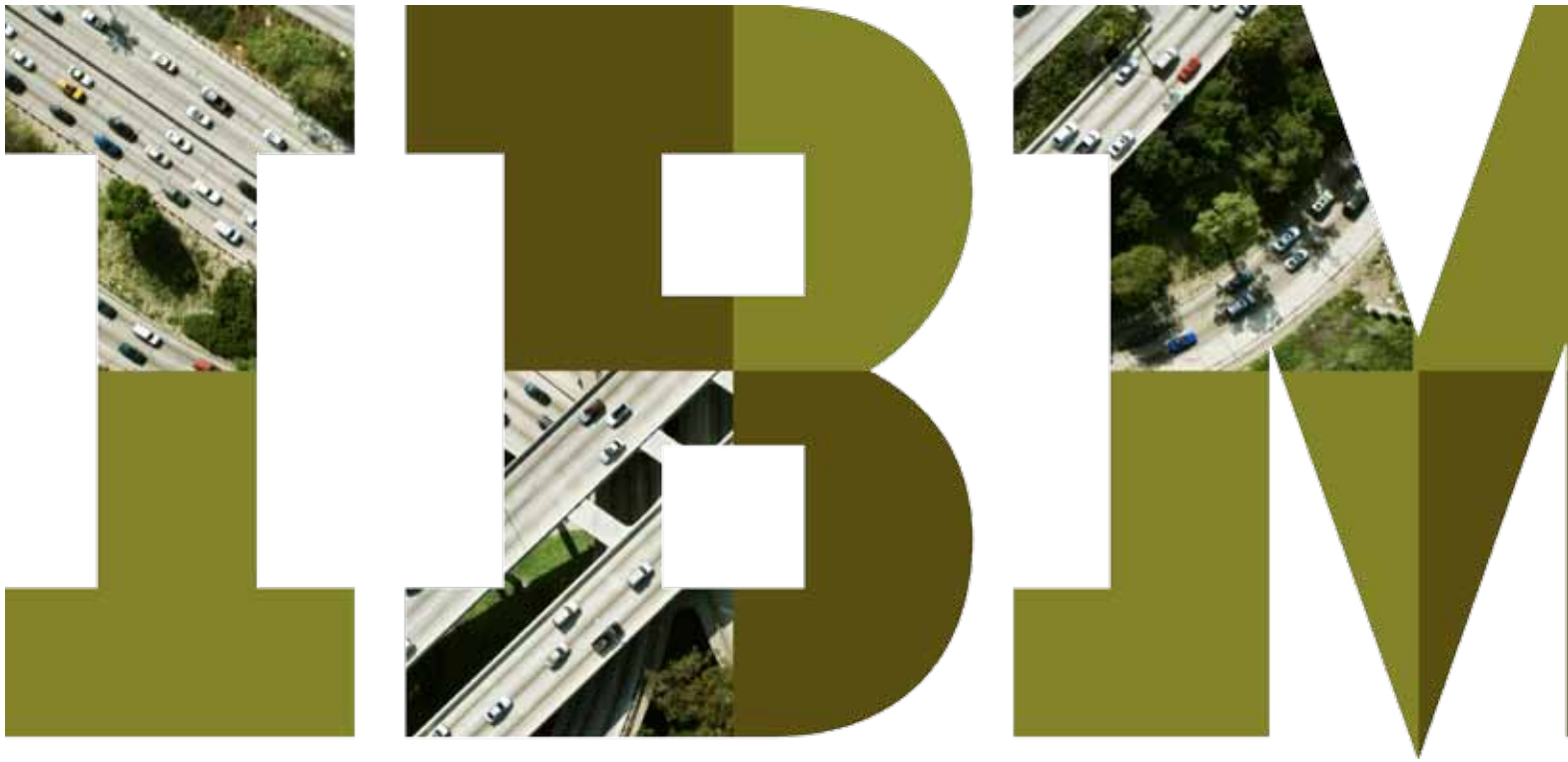
Running at the speed of business

Meet real-world challenges with performance, availability and unprecedented affordability from IBM DB2



IBM

Contents

Introduction

As big data builds into an avalanche of information, many organizations are finding themselves increasingly overwhelmed. But smart business leaders know that effectively collecting, processing and embedding this constantly growing stream of both structured and unstructured data into daily operations is key to accelerating business. Accuracy and availability are critical; a decision based on incorrect, incomplete or missing information will likely impact business negatively.

Fortifying the information infrastructure to support big data is the only way to truly accelerate business and accommodate growth. Whether you need to handle unexpected transactional demands or new requirements, your systems must be resilient enough to meet the challenge. Likewise, the growth of your business depends on delivering the services, products or solutions your clients need and continually improving operational efficiencies.

A robust data system is a fundamental part of a modern information infrastructure. More important, different data workloads require specialized capabilities to excel—so data systems must be agile

enough to process more types of data for many more types of users. IBM® DB2® does just that: it offers multi-platform flexibility and optimized capabilities for a variety of workloads.

This e-book highlights some common scenarios where IBM DB2 can help businesses derive unprecedented value from their expanding data stores—more affordably and reliably than ever before. Read on and see how these examples could apply to your own situation.

Scenario 1: Every transaction counts

Every year around the holiday season, the number of online transactions skyrockets—almost exceeding sales in brick-and-mortar stores. This massive increase in transaction volume can strain database availability—but high-traffic situations aren't a holiday-only phenomenon.

Robert, the CIO of a large online electronics retail company, was planning for an upcoming major celebrity endorsement and big-screen TV sale that his company's marketing team expected to drive significant web traffic. The marketing team forecast predicted transaction rates of up to 80 times higher than normal in the opening days of the campaign. Thousands of online shoppers could be adding items to shopping carts and buying immediately—so any downtime would result in not just lost sales but a highly visible reputation hit for the company.

To effectively fulfill the orders, ensure accurate inventory information and track high-demand dates and regions, Robert knew the company needed a highly available online transactional system.

The new system had to be able to handle hundreds of simultaneous "buy it now" transactions without slowdowns or downtime to keep customer satisfaction high. Furthermore, the underlying transactional system would have to support full recovery in case of a true disaster.

Robert explored IBM DB2 with pureScale®, which offers the ability to handle high volumes of transactional activity and keep the system up and running. DB2 would serve as the backbone of the system, enabling it to support transactions in any form. Robert also realized that he could quickly integrate DB2 pureScale with his existing infrastructure, which includes distributed systems from IBM.

DB2 also supports the sustained availability that's critical in this high-volume, low-margin environment. People visit the site at all times of the day and night, and repeat shoppers are common—so a poor experience will hurt sales. DB2 pureScale always-available features allow Robert's team to scale up with multiple nodes. They can make machine updates online, and minimize the time a machine is offline by having another node take over the work.

Robert's team deployed DB2 in advance of the campaign, taking advantage of its workload optimization capabilities to prep for the expected jump in transactions. Once the promotional sale hit the web, Robert watched as the system smoothly handled the jump in traffic, and the marketing and PR team was thrilled with the low level of customer complaints and the positive feedback on the speed of order fulfillment. With this level of flexibility and built-in redundancy, Robert knows that his system is ready to handle whatever campaign the marketing team comes up with next.

DB2 would serve as the backbone of the system, enabling it to support transactions in any form.

Scenario 2: Fraud detection across the planet

Every year, stolen and cloned credit cards cost the financial industry billions of dollars. For Peter, director of group credit and risk at a major global bank, staying ahead of the bad guys means investing in costly fraud-detection systems so his bank can quickly identify payment card fraud. The global market was changing the parameters, though: threats were coming in from new regions, and connections were spanning continents instead of just cities. The bank needed a virtually instantaneous fraud detection system, so if someone buys a shirt in California at the same time that someone else uses the card for an online transaction in Spain, the transaction is flagged and the card put on hold to prevent unauthorized activity.

However, the bank's fraud systems were not fast enough to enable real-time response to threats, and Peter suspected that slow database response was a factor. When Peter asked his IT counterpart to pull performance logs, the teams found that analytics processing times had started to rise as data volumes rose, and had finally reached a critical tipping point. The analytics software could handle the data, but the database and warehouse were not operating at the same level.

By leveraging the continuous data ingest function within DB2, the team was able to automatically define data sources, stream the data and load data cubes for analytic algorithms to run against—removing much of the administration burden. Workload management features help ensure that data sets are processed quickly, so they can be used for the complex fraud-detection algorithms. In addition, warehousing tools in DB2 allowed the bank to develop a database that will serve as the platform for the anti-fraud applications.

With DB2 in place, Peter has more confidence in his bank's ability to quickly find, investigate and prevent fraud attempts. Today, if a credit card is used twice in different parts of the world at the same time, the bank's analytics software can flag this event through the database so the transaction can be halted almost immediately, helping to protect compromised accounts and reduce fraud-related losses.

However, fighting fraud is a never-ending process. Peter plans to continue building on the fundamental advantages his bank gained through DB2 to become even more proactive about fraud detection, including enabling more sophisticated analytics that will help identify related entities in fraud rings and find suspicious relationships by analyzing data from social media posts, call transcripts and other sources. Peter knows that staying one step ahead is imperative to protect the bank's customers and its business. The intelligence, speed and flexibility he gained with IBM DB2 will dramatically improve the bank's ability to process operational workloads and take appropriate actions in near-real time.

The intelligence, speed and flexibility he gained with IBM DB2 will dramatically improve the bank's ability to process operational workloads and take appropriate actions in near-real time.

Scenario 3: Identifying industry and customer trends

Fashion is all about timing: staying on the cutting edge and responding to fast-moving trends. When a major New York–based clothing chain found itself a split second off the trends in too many instances, the executive board became concerned. With stores on three continents and millions of dollars in revenues, the company must detect shifts in buying patterns or consumer trends as they are happening—and then quickly evaluate and translate them into business operations throughout the supply chain. From design to delivery, coordinated, timely decisions are vital to ensuring that the right fashions land in stores at the right time.

The company's CIO, Ray, constantly fields requests for real-time insights on sell-through rates and inventory so buyers and sales managers can make the best store-level merchandising decisions and ensure that they stock the most popular fashions every season. The head of merchandising was very clear: her team needs that information right away, or they're working half-blind. They already mistimed one release because they didn't have up-to-date information, leaving too many high-top sandals on the clearance racks.

Ray's team designed a system that would deliver a powerful one-two punch of data processing and detailed analytics. IBM DB2 with BLU Acceleration—a combination of innovations designed to simplify and speed reporting and analytics—includes column-organized tables to help optimize in-memory processing, CPU and I/O for outstanding analytics performance. Instead of trying to manually slice and dice data in different ways, queries can be made in column-based tables quickly and with near-instantaneous feedback. Furthermore, business intelligence tools such as IBM Cognos® Business Intelligence enable the team to generate ad hoc reports that help them visualize trends and performance.

With DB2 installed, the retailer can rely on a seamless reporting framework that delivers granular, real-time information for unprecedented insight into emerging trends, buying patterns and regional preferences. DB2 enables buyers and sales teams to operate more efficiently and make better-educated decisions: marketing teams can design promotions based on real-time information so they are better targeted and more effective than ever before. Supply chain, ordering and merchandising decisions are based on near real-time business intelligence and analytics instead of last month's reports, enabling inventory, logistics and purchasing operations to run smoothly and efficiently. The result: the company can deliver the right information throughout the supply chain in time to give consumers what they want when they walk in the store.

With DB2 installed, the retailer can rely on a seamless reporting framework that delivers granular, real-time information for unprecedented insight into emerging trends, buying patterns and regional preferences.

Scenario 4: Data access at your fingertips

Jan has been selling insurance for a leading company for about 20 years, and she takes pride in her personal approach with customers. She handles both residential and business needs for a major metropolitan area of California and visits every household and business personally to ensure the best possible customer experience. Jan needs her enterprise data to be readily available, wherever she is—and she also needs that data to be updated on her tablet in real time as her company's 12,000 agents make changes to the main enterprise database.

Jan is one of a growing number of mobile workers across the globe—a number that is expected to reach 1.3 billion by 2015.[1] To effectively price policies based on real-time risk assessment information and provide accurate information on claims, Jan and other agents in the field need 24/7 access to data. To provide that access, the insurer needs a system that is secure and scalable, and can synchronize data seamlessly between mobile devices and the main system.

Thanks to DB2, IBM Mobile Database and IBM Mobile Database Sync, Jan has everything she needs at her fingertips to provide the best possible service to her customers in a safe and secure environment.

The IBM Mobile Database Sync technology is a standard feature within DB2 offerings, providing the toolkits and database connection tools to help ensure that the right data is delivered to the right mobile devices, quickly and transparently.

The insurance market is crowded, and Jan finds that the sophisticated analysis and reporting tools on her tablet give her an edge over other insurers in the market. The mobile tools make the company's huge collection of current and historical data resources accessible and usable—a critical issue in a data-driven industry. Jan can slice and dice the data to compile very specific or very broad views, depending on her needs. The analysis she generates can easily be shared with the claims department, processing department, billing department and so on—building a solid link between all participants in the fulfillment and operational model.

The IBM Mobile Database Sync technology is a standard feature within DB2 offerings, providing the toolkits and database connection tools to help ensure that the right data is delivered when you want it.

Resources

IBM DB2: Workload expertise for all facets of your business

As the examples in this e-book demonstrate, tackling the real-world challenges created by big data requires an enterprise information management foundation that is smarter and faster than ever before. It must be able to discover and assemble relevant information, analyze patterns and predict outcomes, and visualize and explore for answers. Actions and processes must be automated and analytical performance optimized—all while ensuring continuous availability, security and rapid data recovery in the event of an unforeseen incident.

Mobile, social and analytics technologies are driving the dramatic growth of data and data processing workloads on computing systems. While many smaller data workloads can be consolidated along with applications onto single systems for greater efficiency, big data workloads typically requires systems that are specifically—and in many cases exclusively—designed and optimized for them.

IBM solutions support big data and emerging types of analytics workloads. IBM DB2 enables you to accelerate multiple types of workloads so you can explore new ways to use data and unlock new insights, establish a cost-efficient online data archive with easy-to-use integrated system management and help ensure enterprise security and governance. DB2 is designed to facilitate fast, consistent and affordable performance. By enabling organizations to effectively and efficiently analyze the tremendous volume, variety and velocity of data available today, IBM solutions help organizations reduce complexity, accelerate value and lower the costs of data systems to improve IT economics.

To learn more about IBM DB2 and the enhancements in DB2 10.5, please check out these resources:

- **E-book: Big data, big potential**
- **E-book: Three must-have capabilities for today's warehouse environments**
- **Video: Keep Your Business Up and Running with IBM DB2**
- **Video: Analytics capabilities of IBM DB2 with BLU Acceleration**
- **IBM DB2 database software**

IBM Corporation
Software Group
Route 100
Somers, NY 10589

Produced in the United States of America
April 2013

[1] *TechWorld*, "Mobile workers to reach 1.3 billion by 2015: report," February 2013. http://news.techworld.com/mobile-wireless/3424863/mobile-workers-reach-13-billion-by-2015-report/?olo=rss

Please Recycle

IMM14113-USEN-00