IBM Analytics

Six reasons to upgrade your database

How companies are managing growth, gaining insights and cutting costs in the era of big data

IBM

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Top reasons to change your database

1 **Lower total cost of ownership.** IT professionals are being asked to manage more information and deliver it with better quality of service. At the same time, IT budgets are under scrutiny. Choose the right database solution, and you could lower your total cost of ownership. Read more.

2 **A platform for rapid reporting and analytics.** IT needs to support internal "information consumers" who require quick answers from business applications. The database system plays a critical role in delivering the necessary speed-of-thought analytics. Read more.

3 **Increased scalability and availability.** Maintaining business agility in the world of big data is imperative, and your database software makes a big difference. Read more.

4 **Support for new and emerging applications.** Accommodate new use cases with a database solution that meets the diverse needs of today's workloads. Read more.

5 **Flexibility for hybrid environments.** Get the flexibility you need for future growth with support for multiple deployment options—including on-premises, cloud and hybrid. Read more.

6 **Greater simplicity.** An agile database infrastructure helps you keep it simple and flatten the cost curve. Read more.

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Let's face it: You're not doing business the way you used to.

Your organization is executing campaigns targeting the millennial generation and depending on social data for deeper customer insights. Managers are asking for more data from multiple sources to support new investments and product strategies. Marketing promotions are adjusted in real time based on current sales data across all channels.

Effectively using and managing information has become critical to driving growth in areas such as pursuing new business opportunities, attracting and retaining customers, and streamlining operations. In the era of big data, you must accommodate a rapidly increasing volume, variety and velocity of data while extracting actionable business insight from that data, faster than ever before.

These needs create a daunting array of workload challenges and place tremendous demands on your underlying IT infrastructure

and database systems. In many cases, these systems are no longer up to the task—so it's time to make a decision. Do you use more staff to keep up with the fixes, patches, add-ons and continual tuning required to make your existing systems meet performance goals, or move to a new database solution so you can assign your staff to new, innovative projects that move your business forward?

This ebook presents six reasons why you should consider a database change, including opinions from industry analysts and real-world customer experiences. Read on to learn more.

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Reason 1: Lower total cost of ownership

Today, it is more important than ever that your IT team use its budget and staff efficiently. You need database software that provides industry-leading data management capabilities cost-effectively, while reducing the amount of staffing resources needed to meet service-level agreements (SLAs). But to cut management costs, you also need solutions that help automate a range of administrative tasks, such as configuration setup and deployment, workload management, utilization and storage management, as well as maintenance, upgrades and capacity expansion.

How does IBM DB2 provide cost savings?

- Automation helps reduce database administration efforts
- Multiple compression techniques help cut storage requirements
- In-memory capabilities help you capitalize on business answers more easily

"Our largest and most critical operations table saw a compression rate of 11x! This compression improvement is only on table data. With BLU tables we don't need all the indices either; this provides even more storage savings. These amazing results will save us a great deal of space on disk and in-memory."

—Mike Petkau
Director of Database Architecture & Administration,
TMW Systems, a Trimble Company
Read more DB2 with BLU Acceleration use cases here

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Data compression and multi-temperature data management technologies offer another cost-saving tactic because they reduce storage requirements that typically consume a large percentage of the IT budget.

Cluster topology transparency—not requiring applications to be aware of the underlying cluster and database resources and topology—helps accelerate application coding and testing, and can make application developers more productive. And if you switch databases to save money or accelerate processes, **you don't want the expense of having to modify the applications you're currently using.**

Cost/Benefit Case for IBM DB2 10.5 for High Performance Analytics and Transaction Processing: Compared to Oracle Platforms

Learn more about database costs in this report from analyst group ITG. The report focuses on high-performance analytics and transaction processing, including comparing cost of ownership for IBM® DB2® 10.5 with BLU Acceleration® and Oracle Exadata. For example, three-year costs of ownership for use of DB2 10.5 with BLU Acceleration average 54 to 63 percent less than for Exadata, depending on Oracle enterprise software licensing practices and on whether x86 Linux servers or IBM Power Systems™ are employed. Read the report here.

"We've saved more than a million dollars over the past four years by migrating to DB2."

—**Tom DeJuneas**
IT Team Manager,
Coca-Cola Bottling Co. Consolidated
Read more here

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Reason 2: A platform for rapid reporting and analytics

You need a fresh, new perspective on data warehousing. DB2 with BLU Acceleration has exactly what you're looking for. Inside the DB2 database engine, IBM has brought together a complete, multi-workload environment that can help organizations transform their warehousing. After all, getting answers to your sales team in seconds, not hours, can mean the difference between making and breaking a deal.

More people throughout the organization now rely on data-driven insight to do their jobs. To enable this insight, data scientists and business analysts must have an environment that allows them to explore, investigate, experiment, study, scrutinize and discover new or emerging patterns or trends that will affect their company's markets and revenues.

What makes BLU Acceleration a next-generation technology?

The key is a range of data processing techniques designed to deliver fast answers:

- **In-memory computing technologies**
- **Columnar processing**
- **Actionable data compression**
- **Parallel processing techniques**
- **CPU acceleration**
- **Data skipping**

Balluff GmbH, a manufacturer of sensor solutions, moved SAP Business Warehouse to DB2 with BLU Acceleration running on IBM Power Systems and gained 98 percent faster access to business data and 50 percent faster response times in SAP ERP.

Read more here

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At the same time, your line-of-business users need quick answers to their business questions. This critical group—including executives, customer-facing personnel and mid-level managers—depends on access to business intelligence so they can make timely decisions, understand their business and identify opportunities before the competition. Meeting these needs requires a database that can deliver analytics very quickly and very simply.

"Wow…unbelievable speedup in query run times! We saw a speedup of 273x in our Vehicle Tracking report, taking a query from 10 minutes to 2.2 seconds. That adds value to our business; our end users are going to be ecstatic!"

—Ruel Gonzalez
Information Services, Data Proxy, LLC

In-memory technology delivers results before you can ask the next question

As your organization increasingly uses data for decision-making, the analytics platform needs to deliver results rapidly. Business users need quick access to insights so they can continuously ask questions until they are satisfied with the answers.

In their white paper "Follow the Money: Big Data ROI and Inline Analytics," Wikibon interviewed companies to find out what drove big data success and high ROI. They found that the most successful businesses focused on automating their big data projects, including inline analytics systems that enable real-time decisions. They also found that "IBM BLU is the most mature, relatively low-cost and high-performing solution that can integrate OLTP row-based systems and columnar data for Inline Analytics." Read the full study here.

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Reason 3: Increased scalability and availability

Keeping your business operating requires data systems that are up and running—all the time. Your customers and partners expect continuous uptime and instantaneous responses, and in this social media age, poor performance can quickly turn into a public relations nightmare.

You need a data system with built-in redundancy, high availability and disaster recovery to seamlessly handle unplanned or external disruptions. And you need transparent database clustering capability to scale up or down based on dynamic business volumes.

Affordable, Scalable, Reliable OLTP in a Cloud and Big Data World: IBM DB2 pureScale

With growing data volumes has come an increased demand for throughput and for databases to support more, different and highly complex database operations. This IDC white paper discusses the concept of shared data scale-out clusters and the way IBM DB2 pureScale® is designed to deliver the power of server scale-out architecture. Get the white paper here.

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Can your data system handle the load and deliver results? Here's how others are solving their scalability and availability challenges.

McCormick tastes success with DB2 on IBM Power Systems

For McCormick, the ability to maintain very high levels of availability is critical—especially during peak sales periods. Running DB2 on IBM Power Systems enabled the company to reduce backup windows and online reorganizations, cutting planned maintenance windows by approximately 20 percent and giving valuable time back to the business. **Read more here.**

BNSF Railway, Inc. boosts performance and reliability

With DB2 pureScale software, BNSF Railway is gaining reliability and capacity for its data-driven services. It has achieved 99.999 percent data reliability for transactional applications. **Watch the video and learn more here.**

"We selected DB2 pureScale as our premier continuous business availability platform for a set of tier 1 applications at Handelsbanken. It is critical that these applications are both fully available and that the system scales to meet our needs. We have more than 3,000 jobs we run nightly and with DB2 pureScale we didn't have to change a single line of code to take advantage of the full availability and scalability characteristics that IBM provides."

—**Philip Källander**
Chief Technical Architect,
Data Warehouse & Analytics, Handelsbanken

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Reason 4: Support for new and emerging applications

Customers are price-shopping by phone, comparing ratings on tablets, looking for reviews and experiences on social networking sites and more. All of those touch points represent chances to convince a customer to buy your product and foster loyalty. Therefore, you have to manage the multichannel customer experience accordingly.

This poses a new set of deployment and development challenges for the database infrastructure, which needs to provide the flexibility to serve, capture, store and process a wide variety of information types from different sources. You need a data store that can serve up data when and how it is needed, and capture exactly what is happening at any moment in time.

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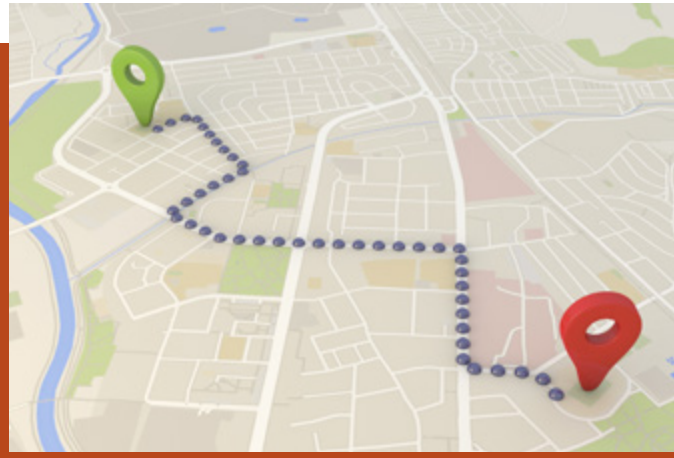
For example, NoSQL ("no SQL" or "not only SQL") capabilities allow you to store and process data in the most appropriate model. NoSQL helps eliminate or avoid much of the overhead associated with traditional relational database systems, and is very useful because it provides flexibility for different types of big data.

For more about leading-edge technologies and investments that can enhance data management, read "Technology Innovations for Enhanced Database Management and Advanced BI." This report from BI Research examines online transaction processing (OLTP) and business intelligence (BI) innovation as well as support for big data. It focuses on the IBM data management portfolio, including IBM DB2 10.5, which incorporates many inventive enhancements for both OLTP and BI processing.



Planning your database journey? Make sure these stops are on your road map

- Flexibility to use "fit-for-purpose" data models whether on-premises or in the cloud
- Ability to scale and grow as needed
- Cloud capabilities for one-click auto-synchronization of NoSQL data to structured data in preparation for advanced analytics

Watch this video and learn more about data warehousing and analytics on the cloud.

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Reason 5: Flexibility for hybrid environments

Maturing virtualization and cloud capabilities allow you to tap into a broad array of deployment options depending on business requirements. But because not everything can (or should) live in the cloud, many organizations find they are managing resources both on the cloud and on-premises. This reality has led to the rise of the hybrid environment: a blend of data and computing resources from both public cloud sources and on-premises systems.

The hybrid environment is often called "the best of both worlds" for businesses. Cloud-based infrastructures offer an immediate opportunity to avoid the costly investment needed for a robust on-premises computing environment. Structured and unstructured data can be found, processed and managed on the cloud without investing in extra on-premises hardware, while IT can maintain control over privileged data.

Successfully managing a hybrid cloud environment has its challenges; security, integration and access are all concerns for even the most cloud-savvy companies. Alleviating these issues requires a data management infrastructure that

Gathering momentum for data in the cloud: A revolution with real business benefits

Harnessing the power of data storage and data management in the cloud is a key strategy for companies striving to control spiraling infrastructure costs and build a competitive edge. For this reason, IBM has created dashDB™, a data warehousing and analytics-as-a-service offering in the cloud. Based on BLU Acceleration and other IBM in-database analytics capabilities, it helps manage capacity on existing data warehouses, analyze data already in the cloud and enable self-service. Read the report "Rapid insight with results: Harnessing analytics in the cloud" to learn more.

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facilitates agile data management and ready access to multiple data types across all sources—and has privacy capabilities to protect valuable data resources.

If you want to implement a hybrid cloud strategy, you need a database management solution that offers configuration flexibility, data modeling transparency and mixed-workload support. Because the data source matters less in a hybrid environment, how you manage that source—and others across cloud, virtual and on-premises locations—makes the difference when delivering data services. Data and insights must flow seamlessly between environments in an efficient and secure manner to enable access to dynamic storage and application interoperability. These environments must also support the same data warehousing policies and other processes to enable strong integration.

A hybrid cloud deployment can help you better manage capital expenditures and infrastructure costs. A cloud database helps reduce costs because developers can provision environments quickly, but also provides agility through rapid project testing. By taking advantage of both in-memory and columnar technology, they can deliver insights faster.

Features that allow integration between the hybrid cloud and current tools and systems increase reuse opportunities and reduce the steep learning curves on new techniques. An integrated data management system helps you avoid the work of investigating, evaluating, purchasing, installing, configuring, testing and tuning all of the individual hardware, storage, operating system, networking and software components.

Desert Research Institute (DRI) invested in IBM expert integrated systems for exactly those reasons. Facing growing complexity in managing its research data, DRI turned to IBM offerings. These systems provide a powerful, scalable and reliable platform that reduces IT costs, accelerates scientific analysis and enables DRI to deliver data as a service. **Get more information here.**

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Reason 6: Greater simplicity

The cost of database administration can rival the expense of database software and hardware. The goal is to lower your data management costs by automating administration, increasing storage efficiency, improving performance and simplifying the deployment of virtual appliances. By automating tasks such as configuration setup and deployment, workload monitoring and management, high availability and disaster recovery, you can free up DBAs to focus on new projects.

You probably hear a lot these days about in-memory technologies, like BLU Acceleration, that use new approaches to drive higher levels of analytic performance. What if you could take advantage of these technologies to deliver out-of-the-box high performance for complex queries, achieve groundbreaking storage savings and ultimately flatten the cost-of-analytics curve?

What makes BLU Acceleration simple to use?

- Load-and-go capabilities
- Out-of-the-box high performance for complex queries
- No need for specialized hardware configurations
- Multi-platform flexibility

Read the PLANSEE Group case study to see how BLU Acceleration simplified SAP operations.

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Other professionals are doing just that. According to Bernhard Herzog, team manager information technology SAP at Balluff GmbH, "We cut report runtime by up to 98 percent thanks to IBM DB2 with BLU Acceleration technology—without changing operations processes or investing in new hardware or software. We were impressed [by] how easy boosting database performance can be."

Reaping the benefits of these technologies is simple, too: IBM has significantly reduced the risk and cost associated with database migration. Applications built to run on comparable Oracle databases require few or no code changes to run on DB2 thanks to high PL/SQL compatibility. The process could take only a matter of days. **Learn more here.**

Harvard Research Group Assessment: IBM DB2 10.5 with BLU Acceleration

The Harvard Research Group interviewed several IBM clients to assess the value DB2 with BLU Acceleration delivers in four targeted use cases:

1. **General analytics and reporting**
2. **Mixed-workload environments where the customer has an OLTP system in addition to needing some analysis and reporting, and where the analytics and reporting can be accelerated using DB2 with BLU Acceleration**
3. **SAP NetWeaver Business Warehouse**
4. **IBM Cognos® ROLAP dynamic cube type applications**

Read the report here.

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Every big data source has different characteristics, ranging from frequency and volume to the type and veracity of the data. Add dimensions like governance and security, and now choosing a data and analytics architecture is rife with additional factors to consider: security, governance, connectivity, portability, management and so on. **As a result, the right data and analytics solution is often a collection of different systems working together very closely.**

IBM Analytics offers an exceptionally deep and broad portfolio of data and analytics technologies and solutions, spanning services, software, research and hybrid cloud. The IBM portfolio includes discovery, reporting and analysis, as well as predictive and cognitive capabilities. It provides enterprise-class

Apache Hadoop, expert integrated systems, analytics on streaming data, text and content analytics, and much more, so you can transform the way your organization understands and uses data and content.

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These systems typically coexist and interoperate with a relational database management system such as DB2, building a solid data foundation that can extend across any environment. Without a scalable, high-performance data management infrastructure, the results and insights from your analytics endeavors may not be fully comprehensive. This foundation of database and data management technologies powers the analytics and governance tools that feed applications.

DB2 software is ready for the big data era. It has the scalability and speed you need to reap the full benefits of analytics, and the flexibility to support cloud and hybrid environments. BLU Acceleration and DB2 pureScale help you meet today's demands for greater access to broader data sources—crucial requirements to make accurate, confident decisions at business speed. You owe it to yourself and your IT budget to take advantage of this new generation of business process and database innovations.

"Together with the IBM SAP DB2 Center of Excellence at the IBM Development Lab, we migrated about 150 InfoCubes from our previous SAP Business Warehouse system already running on DB2 to DB2 10.5 with BLU Acceleration in approximately 16 hours."

—**Bernd Lumpert**
Power Systems Administrator for SAP,
PLANSEE Group

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To learn more about planning for a database change and to discover how IBM makes it easy to move to DB2, please contact your IBM representative or IBM Business Partner.

To learn more about DB2 for Linux, UNIX and Windows and related functions and capabilities for DB2, visit: **ibm.com**/db2/linux-unix-windows

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