

The fast lane to insight

Accelerating analytics from the department to the enterprise





Warehousing in the 21st century

Organizations today need new ways to differentiate their products and services from those of their competitors. As globalization gains momentum, they can no longer rely on geographic or regulatory advantages to give them a competitive edge.

While organizations search for new ways to stand out from the crowd, they must also enhance operational efficiencies. Along with spiraling infrastructure and personnel costs, many face rising expenses associated with ensuring compliance with strict regulations. Once information is discovered, collected and verified for quality, it must be analyzed. Organizations must find the hidden relationships, patterns and trends that will help them generate insights for improving efficiencies and achieving a competitive advantage.

Facing the limitations that can hamper access to insight

Many existing data warehousing solutions have limitations that make it difficult for organizations to fully leverage the power of information. Organizations must address these challenges and work to achieve on-demand access to insight. If they succeed, they can target smaller customer segments and communicate with them about their individual needs and wants.

Limited reach: Business users need to access and analyze a broad array of information across the enterprise. Yet current infrastructures often have limited reach. The proliferation of transaction systems and the emergence of new data sources available outside the business force users to cast a wide net to gather the information they need to support better decision making.

Limited access: Enterprises must deliver useful and timely information to more people as part of everyday business processes to drive innovations and reduce costs. Business intelligence (BI) and analytics tools can help, but only if they are widely available rather than limited to high-level decision makers and specialized analysts.

Limited depth: Many existing information infrastructures also have limited depth. Often business users are unable to get answers to complex ad hoc questions. IT teams need

flexible tools that can capture and deliver more types of information in the way that users need it, when they need it, where they need it and how they need it.

Poor flexibility: Systems may restrict the type and quantity of data that certain users can access. Organizations need ways to support a large number of diverse users and enable those users to quickly and easily customize how they receive information based on their specific needs.

Poor responsiveness: In many cases, existing information systems lack the responsiveness required by today's business landscape. Organizations need solutions that can analyze a wide range of information and deliver actionable insights to executives and frontline decision makers for rapid results.

Excessive costs and complexity: Some BI solutions can be costly to acquire, difficult to deploy and complex to manage. Organizations need solutions that can be implemented quickly and include capabilities that streamline administration and lower the overall cost of ownership.

Lack of real-time operational data: Without the availability of accurate, real-time operational data, business decision making can stall and organizations may miss identifying opportunities and insights.



With DB2, organizations gain the insight and agility they need to capitalize on new opportunities, contain costs and satisfy customers.

Gaining rapid insights without boundaries using IBM DB2 10.5

IBM® DB2® software provides a complete, multipurpose environment that allows organizations to deploy a warehouse solution to access, analyze and act on operational and historical information, whether structured or unstructured. With DB2, organizations gain the insight and agility they need to capitalize on new opportunities, contain costs and satisfy customers.

Unlike traditional data warehouse and BI solutions, which might be complex and inflexible, DB2 simplifies the processes of selecting, deploying and maintaining an information management infrastructure while offering the flexibility for dynamically integrating and transforming data into actionable business insights. With DB2, organizations can centrally, accurately and securely analyze and deliver information as part of their operational and strategic business applications.

Capitalizing on real-time operational data warehousing

Operational data warehousing can yield faster, higher-frequency and finer-grained data capture from operational (transactional) systems and applications into the data warehouse. It delivers operational accessibility to data, providing insights generated within a data warehouse by the applications supporting day-to-day operations. Operationalizing BI can produce better business decisions and help dramatically improve an organization's overall performance.

Accelerating analytics using DB2 with BLU Acceleration— an IBM technology breakthrough

DB2 with BLU Acceleration combines in-memory technology and columnar capabilities that deliver industry-leading storage savings and performance without the limitations and expense of in-memory-only systems. Forward-looking organizations can now generate time-critical actionable insights from their operations with greater simplicity, lower costs and higher performance than before.

Streamlining deployments and accelerating insights while safeguarding information

DB2 supports a broad set of database functionalities and language components to streamline the implementation of a warehouse platform. Developers can focus on key business deliverables and spend less time setting up and managing the warehouse.

DB2 with BLU Acceleration delivers out-of-the-box performance without the need for extensive tuning. Organizations gain high-performance BI query and reporting capabilities while enabling developers and analysts to stay focused on creating new applications and delivering analytics to business users rapidly.

DB2 database management tools and autonomic management enhancements can help reduce the time-to-value for warehouse implementations. The DB2 Advanced Recovery feature can help organizations better prepare for and recover from unplanned service interruptions. Organizations can safeguard data, speed recovery, maximize application availability and minimize the cost of downtime using this comprehensive suite of tools.

Key DB2 capabilities for data warehousing Outstanding performance and storage efficiency with BLU Acceleration

To meet service-level agreements (SLAs) for rapid access to data, IT groups need to accelerate data warehouse performance. At the same time, they must accommodate data warehouse growth while implementing solutions that conserve storage capacity and cut costs. DB2 with BLU Acceleration combines in-memory technology with a columnar table approach to deliver the performance and storage efficiencies that organizations require. Integrated seamlessly into DB2, BLU Acceleration improves performance for BI-style queries that access only a few columns and leverages all the hardware resources for execution of the query.

Access to the most recent operational data with continuous ingest

With DB2, organizations can continuously ingest operational data into the warehouse, reducing capture latency. In more traditional warehouse environments, additional data is loaded once a day, once a week or perhaps even once a month. DB2 continuous data ingest capabilities allow IT departments to load data across multiple agents at the same time, while also dynamically switching between various external load sources to help maximize resource utilization. Continuous ingest is critical for organizations that require the most recent operational data to always be available in the warehouse.

Real-time operational warehousing with database partitioning

DB2 advanced data partitioning capabilities help organizations realize the benefits of real-time data warehousing and deliver greater business value through faster access to time-critical data. DB2 transparently splits the database across multiple partitions and uses the cumulative power of multiple servers to satisfy requests for large amounts of information. The data partitioning capabilities enable organizations to achieve large-scale parallelism and linear scalability.

DB2 with BLU Acceleration in action

A retail store wants to predict and replenish its merchandise stock by analyzing inventory data and product stock levels in near-real time. By deploying IBM DB2 with BLU acceleration, the store is able to process more data faster, delivering results far more quickly than it could before. The fast, accurate data helps accelerate decision making, enabling managers and buyers to quickly assess and reorder merchandise and effortlessly keep pace with demand.

Generating deep insights with embedded analytic services

DB2 includes a number of capabilities designed to help organizations discover new relationships and patterns in information without requiring data mining expertise.

- Data preparation capabilities plus data mining wizards and solution templates help accelerate the creation of “ready-to-run” models.
- Support for time-series analysis and prediction allows users to gain greater insight into transactional information and forecast growth with more confidence to make better business decisions.
- Support for virtual cubes and internal performance improvements in cubing services give business users more flexibility to perform multidimensional online analytical processing (OLAP) analysis in near-real time with large volumes of data.
- Fine-grained security control in cubing services gives organizations the assurance to seamlessly deliver OLAP information across the enterprise.

The true benefit of these capabilities can be felt in organizations where the IT personnel have limited or no data mining expertise.

Facilitating analytics with integrated BI tools

The traditional separation of BI tools from the data warehouse can create significant problems for effective data analysis. DB2 addresses these problems by building BI tools directly into the platform. This model ensures that users always work with the most complete and up-to-date information. Users can even access analytics tools from frequently used applications such as web browsers or spreadsheets. Integration of BI tools enables organizations to assemble applications, dashboards and other analytic views without requiring technical expertise.

DB2 helps simplify the process of assembling in-line analytics applications with point-and-click functionality. The platform also provides analytics application code that can be quickly modified and extended to address emerging business needs.

Fostering smarter decisions with comprehensive query and reporting capabilities

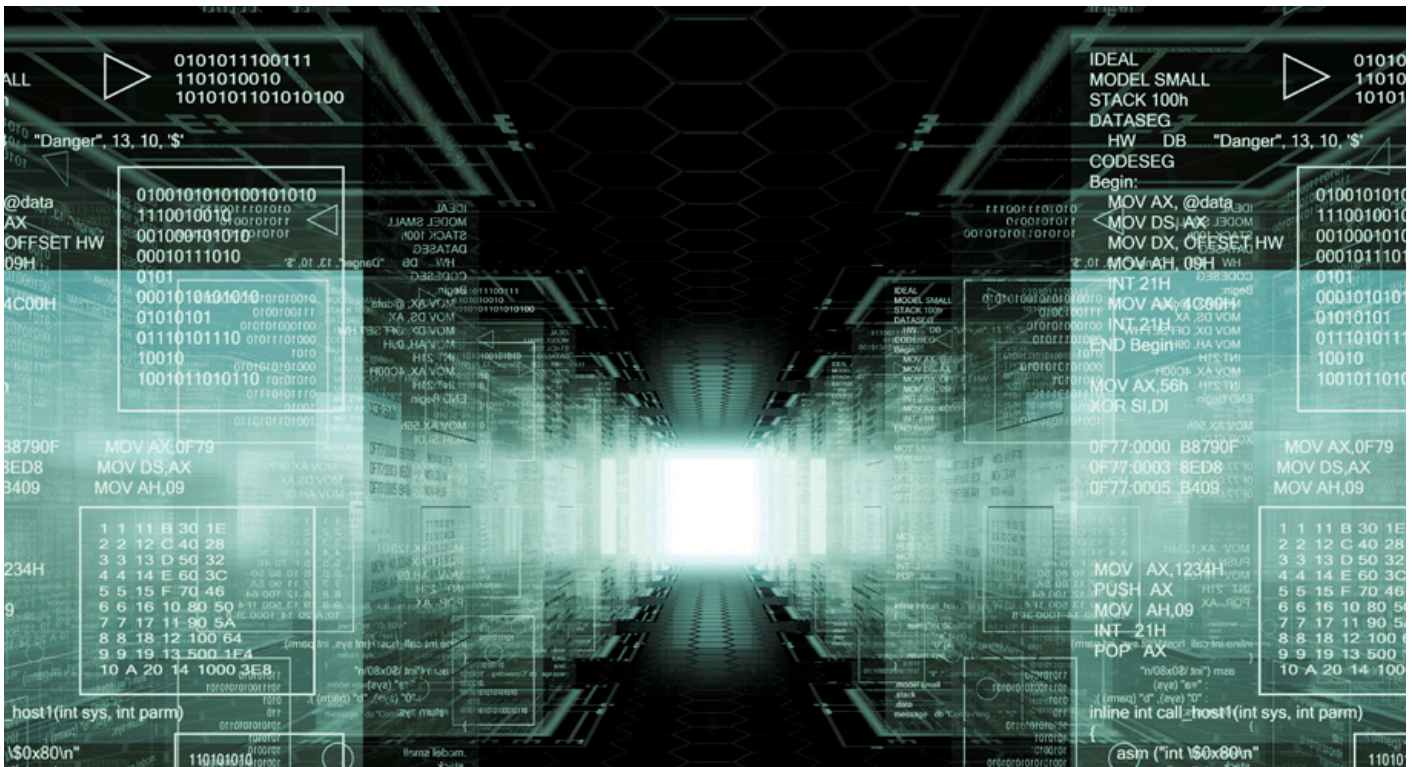
For report-authoring capabilities that are easy to use, organizations can incorporate IBM Cognos® Business Intelligence Query and Reporting. This software fits the needs of users across the organization, from professional report authors responsible for designing one-to-many reports for the enterprise to business users who need the ability to create their own ad hoc queries or customize existing reports.

Increasing access to information with integrated OLAP cubing services

Historically, access to BI tools and reports has been limited to select “power” users and small groups of decision makers. However, the cubing services for OLAP in DB2 allow organizations to provide any user with tools for analyzing business data and generating business insights. Cognos BI dynamic cubing services for OLAP enable users to ask intuitive and ad hoc questions that require multiple perspectives on data. These services facilitate the exchange of information among systems, allowing users to link multiple business variables to perform deeper analyses than previously possible. Rich presentation components support visual analysis of data mining results, which can then be embedded into web-based applications, customized and distributed to a broad range of users.

Pervasive analytics with Cognos BI and DB2

Cognos BI Query and Reporting capabilities enable users to create a single report that can be accessed on multiple devices, in multiple formats and in other applications and processes. Designed for enterprise-level deployment, the software offers proven scalability to hundreds of thousands of users as well as full failover recovery and dynamic load balancing. Whether in the office, at home or on the road, users can perform the very latest warehouse analytics on a desktop or laptop, through the web or even on a mobile device.



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Streamlining query performance and design

Query writing and design can be a time-consuming activity that puts an unnecessary load on the warehouse and jeopardizes SLAs. By using IBM InfoSphere® Optim™ Query Workload Tuner, organizations can cut costs and improve performance by providing expert advice on writing high-quality queries and making improvements to the database design.

Sustaining performance for numerous users with extreme workload management

As more and more users access real-time BI, enterprises often have difficulty balancing system performance, administrative workloads and costs. The workload management capabilities can help organizations apply BI more broadly to improve operational business processes throughout the organization by dividing workloads into priority groupings to meet various SLAs. Ultimately, these capabilities help organizations save money by providing users with a more holistic, trusted and consistent view of information across business functions and by enabling users to better analyze performance across divisions and activities.

IBM DB2 Warehouse in the real world

The New York Police Department (NYPD) has an innovative information management approach that focuses on delivering relevant, comprehensive, insightful information to police officers from the moment they receive a new case. The NYPD uses IBM DB2 Warehouse to help provide crucial information to officers within moments of a reported crime—that brief window during which the right information can potentially lead to faster arrests. Officers now have at their fingertips unprecedented access to critical information, from 911 call logs, parole and probation files, recent crime reports and other data from national systems to details on possible suspects in the vicinity. By using analytics to explore all relevant information, including information that is not captured in a typical data warehouse or transaction system, officers can act more quickly to save lives.

About IBM data warehousing and analytics solutions

IBM provides a broad, comprehensive portfolio of data warehousing, business analytics and information management software, hardware and solutions to help organizations maximize the value of their information assets and discover new insights to make better, faster decisions and optimize their business outcomes. All IBM data warehousing and analytics solutions are aimed at simplifying and accelerating the delivery of business analytics insights.

The IBM portfolio includes data warehouse appliances that integrate database, server and storage into a single, easy-to-manage appliance that requires minimal setup and ongoing administration, and provides fast and consistent analytic performance. IBM also offers pre-built and pre-integrated workload-optimized data warehousing and analytics platforms and data warehouse software for operational intelligence. These offerings are enhanced with additional support for big data and new types of analytics workloads, including continuous and fast analysis of massive volumes of data-in-motion.

For more information

To learn more about IBM data warehousing and analytics solutions, please contact your IBM sales representative or IBM Business Partner, or visit: ibm.com/software/data/infosphere/data-warehousing



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