The SAP NetWeaver Business Warehouse (SAP NetWeaver BW) component is a vital tool for organizations that need to transform vast quantities of data into actionable intelligence. Customer growth, rising numbers of transactions and the incorporation of new types of data can create excessively large online SAP NetWeaver BW databases that slow query responses, increase management complexity and add costs. Organizations need ways to streamline the online database without giving up easy access to data.

The IBM DB2 Near-Line Storage Solution for SAP NetWeaver BW is designed to accommodate data growth while enhancing the performance of your online database, reducing costs and retaining fast access to information. Through a close, long-standing partnership, IBM and SAP have produced a fully integrated solution that enables you to deploy and manage a near-line storage environment without adding complexity.

**Facing the challenges of explosive data growth**

Volatile data growth can significantly impact the performance of your SAP NetWeaver BW implementation. As the volume of information in the online database swells to tens of terabytes, query response times increase, discouraging decision makers from conducting potentially valuable analyses. Data growth also translates into added costs: to support an expanding database, IT groups often buy more servers, storage and network components, and IT personnel spend more time managing databases and systems.
Many organizations could benefit from moving historical and infrequently used data out of their online SAP NetWeaver BW databases and high-performance resources to archival systems. Yet IT administrators are reluctant to archive data because archival systems make it difficult and time-consuming to retrieve information.

The newest version of IBM DB2, IBM DB2 10.5, includes innovative BLU Acceleration technology. It helps speed analytics and reporting using dynamic in-memory columnar processing, enabling frequently used data to be shifted from SAP NetWeaver BW to IBM DB2 Near-Line Storage Solution (see Figure 1). Coupled with innovations such as parallel vector processing and actionable compression, this functionality helps make analytical queries faster and less complex. Database tuning, indexes and aggregates are not needed, which means the online database can be made even smaller than before.

IBM DB2 with BLU Acceleration offers technological innovations that lead to impressive performance improvements:

- **Dynamic in-memory technology**: Leverages column-oriented in-memory processing with dynamic transfer of used data into memory
- **Actionable compression**: Maximizes data compression while preserving the order of encoding so data can be quickly analyzed without the overhead of decompression
- **Parallel vector processing**: Enables DB2 users to capitalize on the latest advances in hardware, such as multi-core processors and single instruction, multiple data (SIMD) capabilities, to enhance performance
- **Data skipping**: Bypasses unnecessary processing of irrelevant data to speed results

*Figure 1. Dynamic in-memory columnar processing enables frequently used data to be shifted from SAP NetWeaver BW to IBM DB2 Near-Line Storage Solution with BLU Acceleration.*
DB2 with BLU Acceleration runs on and extends the use of existing infrastructure to increase return on investment. It enables clients to optimize the system configuration—operating system, memory, storage—for cost and service levels without rigid hardware configurations or requirements, dramatically lowering costs as data volumes increase.

Clients have improved individual SAP NetWeaver BW queries to run 20 to 139 times shorter than before.¹

**Overcoming hurdles with near-line storage**

By creating a near-line (or “near-online”) environment, the DB2 Near-Line Storage Solution for SAP NetWeaver BW provides a middle ground between online and traditional archival systems. Administrators can move infrequently used data out of the online database to a separate database, reducing the size of the online database and consequently boosting its performance (see Figure 2). At the same time, keeping data in a DB2 database enables organizations to capitalize on DB2 management capabilities; users can access information in the DB2 database more quickly than if the data was archived in another file system or on tape.

From delivery and installation to ongoing management and technical support, the DB2 Near-Line Storage Solution is fully integrated into SAP NetWeaver BW, helping to provide administrators and users with a seamless SAP NetWeaver BW experience.

---

**Figure 2.** Near-line storage can help improve performance while reducing costs by decreasing the storage capacity required for online systems and minimizing administrative operations.
Simplifying management with tight integration
Administrators can create the DB2 Near-Line Storage environment rapidly using only the SAP installation tool. They then add a DB2 Near-Line Storage connection to the SAP NetWeaver BW system and create a data archiving process for each InfoProvider. Administrators can select particular data to be moved or set rules based on the age of the data, product group or other criteria. Through the archiving interface, data can be transferred to the DB2 Near-Line Storage environment, the traditional archival system or both—simultaneously. The entire process can be automated to further simplify management.

Data stored in the DB2 Near-Line Storage database is read-only. To enable modification of the data, administrators simply reload the data into the online SAP NetWeaver BW system and then transfer data back to the DB2 Near-Line Storage system after changes are made.

For those and all other tasks, no specialized IT skills are required—administrators can draw on existing skills for managing SAP NetWeaver BW and DB2 environments. The ability to automate tasks and use remote management capabilities through the DBA Cockpit helps ensure that the DB2 Near-Line Storage environment will not add IT complexity. If additional support is required, organizations can rely on standard SAP NetWeaver BW on DB2 support channels.

Increasing online performance
By moving infrequently used data out of the online database, the DB2 Near-Line Storage Solution for SAP NetWeaver BW can help significantly increase performance of the online system. Reducing the size of the online database can accelerate data load times and query results while also speeding up frequent maintenance tasks, such as backing up data and taking snapshots.

The solution also brings proven DB2 capabilities to the near-line environment. These capabilities, such as automatic storage, self-tuning memory management, index and row compression, Multi-Dimensional Clustering (MDC), the Database Partitioning Feature (DPF) and BLU Acceleration, help enhance database efficiency, facilitate scaling and optimize performance.

Reducing costs
By moving data off of the high-performance—and high-cost—systems often used for running SAP NetWeaver BW, the DB2 Near-Line Storage Solution can help organizations significantly decrease costs. Keeping only recent, frequently used data in the online database helps you avoid purchasing more and more hardware to stay on pace with data growth. Administrators can deploy the DB2 Near-Line Storage environment using more cost-effective servers, storage and networking since users do not need instantaneous access to that historical data. Using DB2 Compression technology in the DB2 Near-Line Storage environment helps control costs by minimizing the storage capacity required even as the database volume grows. Sub-capacity pricing also allows cost-effective DB2 licensing solutions.

Creating a DB2 Near-Line Storage environment also can help reduce management costs. Typically, the information stored in a DB2 Near-Line Storage system does not have the same availability requirements as the data kept in an online system. As a
result, administrators do not have to back up that data as frequently or take continuous snapshots. Because they can send data to the traditional archival system at the same time as the DB2 Near-Line Storage environment, administrators can keep data well protected without excessive manual intervention.

**Accelerating access to information**
Moving infrequently used data to traditional archiving environments can deliver similar performance and cost benefits as the DB2 Near-Line Storage Solution. But once data is moved to those archival environments, access to information is limited. A query that takes only seconds in the online system might take much longer in an archived environment because archival tapes must be mounted and data must be reloaded to read all the information needed.

With the DB2 Near-Line Storage Solution for SAP NetWeaver BW, users continue to have transparent access to the data in the DB2 Near-Line Storage database. They access data in that database the same way they would access data in the online SAP NetWeaver BW database and experience only slightly longer query times. As a result, users can work with even infrequently used data to generate new business insights.

**Providing options with flexible implementation**
While this solution uses DB2 for the near-line environment, it can be deployed even if you currently use a different database platform for SAP NetWeaver BW. The DB2 Near-Line Storage Solution for SAP NetWeaver BW gives you the flexibility to capitalize on near-line storage without forcing you to upgrade or modify your existing environment.

**Delivering business intelligence**
The DB2 Near-Line Storage Solution for SAP NetWeaver BW can help you accommodate fast-rising volumes of data while improving performance, reducing costs and simplifying access to information. Delivered as part of SAP NetWeaver BW and available at no cost for organizations that purchase DB2 through SAP, this solution provides a simple way to combine the power of SAP NetWeaver BW and DB2 to deliver effective business intelligence.

IBM takes performance a step further with DB2 10.5 with BLU Acceleration, providing even greater storage savings and faster performance than previous versions of DB2. Available for SAP systems based on SAP NetWeaver BW 7.01 or higher, new customers can benefit from BLU tables right from the start because they are installed during the standard SAP implementation process. Existing clients can transparently convert all or only the selected DB2 Near-Line Storage objects to DB2 with BLU Acceleration columnar tables using the online tooling included in the SAP standards.

**For more information**
To learn more about the DB2 Near-Line Storage Solution for SAP NetWeaver BW, please send email to the IBM SAP International Competence Center at isicc@de.ibm.com, or visit: www.ibm-sap.com/db2 and www.sdn.sap.com/irj/sdn/db6