

VERITAS Database Edition™ for DB2 Enterprise Edition (EE)

OPTIMAL MANAGEABILITY, AVAILABILITY AND PERFORMANCE FOR DB2 EE ENVIRONMENTS

DB2 database administrators face increasing demands on DB2 databases. Large, dynamic DB2 server databases often increase complexity and cost, as well as intensify requirements for performance and high availability.

Historically, DB2 administrators have had two options: run DB2 on raw devices for performance, but diminish manageability; or run DB2 on file systems for better manageability, but sacrifice performance.

VERITAS Database Edition™ for DB2, certified by IBM Data Management Systems, is an integrated solution that delivers performance and manageability. The solution suite includes VERITAS Volume Manager™, VERITAS File System™ and VERITAS Quick I/O™.

Volume Manager removes physical limitations of disk storage, allowing administrators to configure, share, manage and optimize storage I/O performance online without interrupting data availability. File System complements Volume Manager and provides online resizing of the file system and online defragmentation, reducing planned downtime. Quick I/O is a unique database accelerator technology available only from VERITAS. It specifically addresses the raw device/file system tradeoffs compared to databases on file systems. Quick I/O allows administrators to build DB2 on file system for improved manageability and availability without sacrificing performance or data integrity.

Database Edition for DB2 also offers a High Availability (HA) option that includes VERITAS Cluster Server™ and a VERITAS Cluster Server Agent for DB2. Database Edition/HA for DB2 proactively manages servers across clusters up to 32 nodes and can recover automatically from hardware and software failures.

SUPERIOR PERFORMANCE

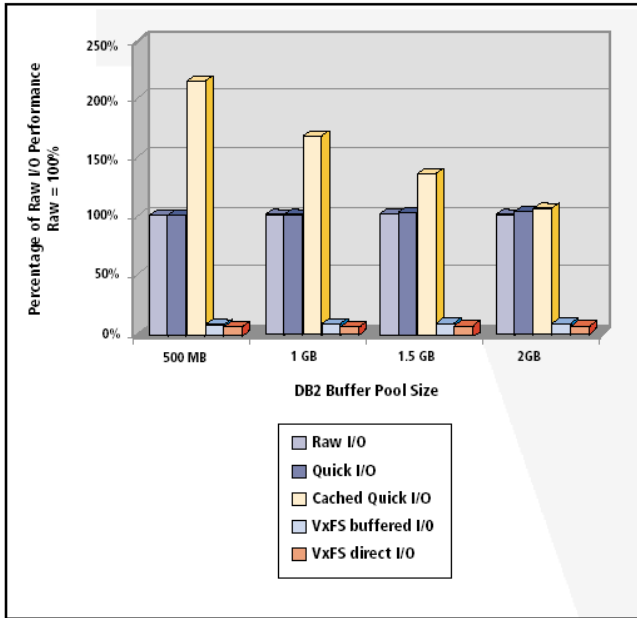
VERITAS Database Edition for DB2 helps the performance of DB2 environments in four ways.

First, Quick I/O presents file systems to DB2 as raw character devices. This improves performance because it bypasses traditional UNIX file system operations that use double buffering and enforce single-writer locks. Eliminating buffering also provides an important data integrity advantage. Because Quick I/O files appear as raw devices, they can take advantage of asynchronous I/O (Solaris kernel asynchronous I/O as well as AIX asynchronous I/O) to help performance. Asynchronous I/O has been available only for raw devices and is not supported in database configurations built around conventional UNIX file systems.

Another way Database Edition *for DB2* helps performance is with Cached Quick I/O. Cached Quick I/O caches frequently accessed database blocks in a buffer cache, reducing physical I/O. System memory can be used for more performance gains. (Note that while Cached Quick I/O buffer reads, it still performs direct writes to disk to ensure data integrity.)

The third way Database Edition *for DB2* improves performance is through VERITAS File System extent-based block allocation. This feature provides excellent performance for large files and minimizes file system fragmentation.

Database Edition *for DB2* also helps performance with RAID. RAID improves throughput and bandwidth by enhancing parallel data transfer in online transaction processing, decision support and other database environments. It also provides scalable performance and I/O load balancing.



HIGH AVAILABILITY

Database Edition *for DB2* improves the availability of DB2 environments, enabling file system recovery within seconds after a system crash or reboot, regardless of file system size. If a disk fails, RAID provides uninterrupted access to data and online replacement of failed devices.

Online management of volumes and file systems maintains higher overall DB2 availability while allowing administrative tasks such as file system resizing and storage reconfiguration to be accomplished while users access data.

For even more availability, Database Edition/HA for DB2 provides a clustering solution for DB2 Enterprise Edition. With Cluster Server, all critical hardware and software components comprising the DB2 server database are managed proactively. Cluster Server automatically detects failures and recovers DB2 server databases. A VERITAS Cluster Server agent provided with the DB2 software controls monitoring and recovery of the DB2 server. A manual switchover option maximizes DB2 availability, even during system upgrade and maintenance.

ENHANCED OFF-HOST PROCESSING

Database Edition for DB2 also integrates with FlashSnap™, which lets administrators create online copies of production data with minimal effect on applications or users. They no longer have to worry about shrinking maintenance windows and reduced performance during backups, decision support and reporting.

IMPROVED MANAGEABILITY

VERITAS Database Edition for DB2 improves manageability by reducing administrative workload and making administration less prone to errors.

Management of volumes and file systems is easier with a simple, Java-based graphical user interface. Even large amounts of data can be managed easily with Database Edition for DB2, which supports files larger than 2GB and file systems up to 1TB.

The database administrator's guide provides tuning tips and guidelines for storage layouts.

Database Edition *for DB2* is the optimal foundation for your DB2 environment, delivering superior performance, increased availability, and improved manageability.

VERITAS DATABASE EDITION *FOR DB2 EE*

Features	Benefits
Superior Performance	
Quick I/O	Provides raw device performance with the ease of file system manageability
Cached Quick I/O	Increases database performance beyond that of raw partitions by caching frequently accessed data
Extent-based block allocation	Provides excellent performance for large files and minimizes file system fragmentation
Striping (RAID 0), striped mirrors (RAID 1+0) and mirrored stripes (RAID 0+1)	Increases throughput and bandwidth while providing scalable performance and I/O load balancing
High Availability	
Mirroring (RAID 1)	Improves data availability while increasing throughput
RAID 5	Cost-effective redundancy for read-intensive environments
File system journaling	Enables file system recovery within seconds after a system crash or reboot, regardless of file system size
Online management	Maintains higher overall DB2 availability by allowing administrative tasks to be performed while users access the database
Automatic monitoring and failover (HA version)	Proactively manages DB2 environments to the highest levels of availability
Improved Manageability	
Online management	Allows more frequent database tuning to maintain an optimized environment without downtime
Support for larger than 2GB files and file systems up to 1TB	Simplifies administration of very large DB2 file systems up to 1TB server databases
VERITAS Cluster Server Agent <i>for DB2 CD</i>	Enables DB2-specific management and easy deployment of high availability
Java-based graphical user interface (Storage administrator)	Simplifies volume and file system management

OPTIMAL MANAGEABILITY, AVAILABILITY AND PERFORMANCE FOR DB2 UDB ENVIRONMENTS

SYSTEM REQUIREMENTS

SUN SOLARIS SYSTEMS

- Solaris 2.6, 7 or 8
- DB2 Enterprise Edition 7.2
- SPARC/Solaris-based servers, including Sun's Enterprise Server product line and the Sun Fire servers (3800, 4800, 4810, 6800, 12K, 15K)
- 2-32 SPARC/Solaris-based nodes with shared storage for VERITAS Database Edition/HA *for DB2*

IBM AIX SYSTEMS

- AIX 5.1 (Maintenance Level 1 or higher) or AIX 5.2
- DB2 Enterprise Edition (EE) 7.2 (with FixPak 6 or higher) or DB2 8.1
- RISC (Power) based servers (like p-series and s-series)
- IBM AIX Cluster (up to 16 nodes) with shared storage for VERITAS Database Edition/HA *for DB2*

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