IBM DB2 Advanced Enterprise Server Edition

IBM

Highlights

- Streamline data management and accelerate business use of data while managing costs
- Enhance database performance and quality of service with built-in performance optimization tools
- Increase development efficiency throughout the life cycle of data-driven applications
- Ensure that critical data is both continuously available and highly secure



In a business, no one stands alone—when people come together as a team, they can achieve much greater success than they could as individuals. The same thing is true in the world of data management. The database may be the foundation of your data management infrastructure but with a supporting team of development and management tools, it can drive your business to even greater heights.

However, organizations often choose their database and their management tools separately. Each of these components must be acquired, installed, upgraded and operated independently from the others—a complex, highly inefficient process.

IBM® DB2® Advanced Enterprise Server Edition is an easy and cost-effective way for organizations to assemble a top-flight team of data management software. It bundles IBM DB2 database software with a comprehensive range of optimization, development and management tools. At one stroke, businesses can acquire an integrated package that helps them manage enterprise application data and optimize datadriven applications from requirements to retirement and across heterogeneous environments.

Streamlined packaging delivers enhanced value without adding complexity

DB2 Advanced Enterprise Server Edition delivers value by packaging DB2 with additional performance optimization features and a range of rich administration and development tools—all at a low price and with a single part number.

At a time when organizations are used to doing more with less, this is a simple case of getting more for less: a full-featured, enterpriseclass version of DB2 with a suite of development and optimization tools included.

This simplified packaging helps to encourage rapid cross-platform development and streamlines database porting. Comprehensive database administration tooling allows IT organizations to manage their DB2 environments without complex implementations of multiple add-on tools. The package also includes DB2 Label-based Access Control (LBAC) to provide advanced data security, and several high-availability features to help ensure that critical databases remain available around the clock.

At the heart of the package is the industry-leading DB2 database, with its well-known performance advantages and built-in cost-savings features. For example, DB2 Deep Compression technology helps customers reduce the size of their databases across many different types of data including row data, indexes, temp tables, XML and binary objects. This can help to reduce overall storage requirements while improving the efficiency and performance of disk and I/O, both of which contribute to greater cost efficiency in the data center.

Built-in tools help to optimize performance of data-driven applications

DB2 Advanced Enterprise Edition includes an array of robust development tools. IBM InfoSphere[™] Optim[™] Performance Manager provides out-of-the-box performance monitoring and management to help improve quality of service and prevent interruption of business operations. Its intuitive web interface is designed for use-anywhere monitoring, alerting and diagnosis of potential performance bottlenecks.

Integrated tools within InfoSphere Optim Performance Manager are designed to enable easy setup and use of IBM DB2 Workload Manager, which helps ensure that system database resources are applied according to the priorities of the business. Historical performance data provides the necessary context for proactive performance management, trend analysis

wworkload			Sorting -			wLocking						
Transactions:	60.233 /m	n	Active sorts:	0		Currently waiting		0.7%	1.6	10		
Failing	B 9,000 %	31	Sorts:	1.718 /min		applications:			1.00			
transactions:	and the second		Sort overflows:	0.%	0	Longest weit time:						
Open connections: Active	3		Post threshold	0.%	3	Average lock wait time per transaction:		0 sec				
connections:	*		Sort time per	0 sec		Lock alerts;	3	0				
Rows read per fetched row:	4.563		minute:	O BEC		Deadlocks:		8				
Haximum CPU time			Average sort time:	0 sec		Timeouts:	9	0				
of running statements:	0.002 sec		Average sorts per transaction:	0.029		Escalations:	-	0			_	
Maximum elapsed time of running statements:	1000		Sort memory in use:	0 bytes		I/O and Disk Space					-	
	8.151 sec		System		_	Buffer pool hit ratio:		90.697 %	-	-		
Critical workloads:	100		CPU utilization:	27.%	8	Logical reads:	3	2,099.267 /	min			
Caching			Total virtual memory	15.313 G8		Physical reads:		27.356 /mir				
Catalog cache hit	B 94.147.5.		Virtual memory in			Physical writes:		298.029 /m	in			
retio:	. 94.147 %		uite:	95.337 %		Prefetcher hit ratio:	3	100 %	_	-		
Package cache hit ratio:	B 71.239 %		Swap memory in use:	10.156 %	H	Asynchronous read ratio:		2,492.%	a	4		
Utilities			Real memory in use:	98.074 %		Page cleaner afficiency:	3	80.358 %	_	1		
Active utilities:	10 C					Asynchronous write ratio:		2,683.%	er:	e.		
Logoino			High Availability Disas	ter Recovery	(HADR) -	Average page read						
Log space used:	1.008.83		HADR role:			time:	3	0.026 sec				
Log space used:	5.081 %	1 4	HADR state:	1.001		Average page write	8	0.028 sec				
Log write rate:	9.324 KB/		HADR connection status:	1.1		time:						
	A-328 KB/8	iec.	HADR connection			Direct writes:		22.106 /mir				
Log to be read for recovery:	9.966 MB		time:	- ++1		Direct reads:		498.988 /m	in	_		
Maximum indoubt transactions:	0		HADR log gep:	**								
			HADR missed heartbeats:									

Figure 1: The InfoSphere Optim Performance Manager dashboard has a color-coded, web-based interface designed to quickly alert users to problematic areas. Once a problem has been identified, specific diagnostics and details are provided to focus on that area. Integration with InfoSphere Optim products provides the resolution needed to correct the problem. and capacity planning. In addition, InfoSphere Optim Performance Manager supports health monitoring for development and test systems running DB2 throughout the data center using a single integrated console (see Figure 1).

DB2 Advanced Enterprise Server Edition also offers a range of choices to ensure that critical databases remain available 24x7. The IBM DB2 High Availability and Disaster Recovery (HADR) package facilitates rapid failover from a primary or standby server and is designed for quick setup. Some key databases have such critical availability and access requirements that both the primary and standby need to be read and written to at the same time; DB2 HADR can be configured for read-only access on the remote system to increase the value of the standby system. DB2 Advanced Enterprise Server Edition also includes restricted use of the IBM InfoSphere Replication Server, enabling active/active replication between a pair of DB2 data servers. Federation between DB2 and Oracle databases is included to help simplify DB2 administration for customers using both DB2 and Oracle.

Comprehensive administration and development tools enhance efficiency

DB2 Advanced Enterprise Server Edition includes a full range of capabilities for both developers and database administrators. The new packaging and inclusion of tools increases the overall value of the database solution, simplifies administration and helps to generate cost savings.

DB2 Advanced Enterprise Server Edition is packaged with several InfoSphere Optim solutions that can help companies manage business-critical data and optimize the performance of data-driven applications throughout their life cycle. InfoSphere Optim tools support each phase of the life cycle with robust offerings for data-centric tasks and roles. These offerings include:

• *IBM Data Studio*, which is available in either a standalone or an integrated development environment (IDE) configuration, offers enhancements that help simplify installation and enable customizable catalog navigation. The tool allows IT personnel to develop template-based stored procedures. It can also enhance data browsing and boost usability through a new query-tuning UI. In addition, Data Studio can help IT departments maintain high levels of reliability through an optional health monitor that launches seamlessly from the Eclipse client.

 IBM InfoSphere Optim Database Administrator is designed to help save time and reduce errors associated with complex database changes. It provides copy and paste, compare and synch, and data migration features that help IT professionals identify and manage dependent objects automatically. InfoSphere Optim Database Administrator provides seamless integration with IBM InfoSphere Data Architect (available separately) for governing and accelerating the process of taking

Core server	IBM DB2 Enterprise Edition					
Compression	DB2 Storage Optimization					
Workload management	DB2 Workload Management					
Disaster recovery	DB2 High Availability and Disaster Recovery (HADR)					
Advanced security	DB2 Label-based Access Control (LBAC)					
Data partitioning	DB2 Range Partitioning					
Federation	InfoSphere Federation Server					
Active/active replication	InfoSphere Replication Server					
Administration	InfoSphere Optim Database Administrato					
Development	InfoSphere Optim Development Studio, IBM Data Studio					
Performance tuning	InfoSphere Optim Performance Manager					

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a database from design through deployment. It can also be used with IBM InfoSphere Optim Test Data Management (available separately) to streamline test data creation, reduce storage consumption and manage data privacy.

IBM InfoSphere Optim Development Studio helps to increase development efficiency up to 50 percent for Java[™] data access.¹ Designed to facilitate cross-system development and migration, this tool supports development for DB2, Oracle and IBM Informix®. Its SQL outline feature facilitates developer and DBA collaboration by isolating all the SQL code for review and enabling impact analysis by correlating SQL with source code, database objects and ALTER requests.

InfoSphere Optim Development Studio allows companies to leverage IBM InfoSphere Optim pureQuery Runtime (available separately) to enhance and lock down performance while mitigating SQL injection risk. This tool also allows IT personnel to deploy SQL scripts, procedures and functions to multiple development and test servers with a single command.

By simplifying the acquisition and maintenance of database management tools, DB2 Advanced Enterprise Server Edition can enable IT departments to reduce complexity and drive greater value. Performance optimization tools included in the package can help improve database performance and quality of service, while included administration and development tools help to enhance development efficiency throughout the application life cycle. Integrating key DB2, Optim and InfoSphere technologies into a single package, DB2 Advanced Enterprise Server Edition minimizes complexity and costs while helping organizations streamline data management. It's a team of database software and tools that can help you create business value faster and easier than ever before.

For more information

To learn more, please contact your IBM representative or visit **ibm.com**/software/data/db2/linux-unix-windows/edition-advanced-enterprise.html



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¹ "Univar increases developer productivity up to 50 percent with IBM Data Studio," February 2010. ibm.com/software/success/cssdb. nsf/CS/LWIS-7BCT45?OpenDocument&Site=dmmain&cty=en_us



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