

Optimize Database and Application Performance for Business Success with CA's Database Performance Management

CA Database Management

Database Administration

Database Backup and Recovery

Database Design & Modeling

Database Performance Management

CA's Database Performance Management

CA Bind Analyzer™ for DB2 for z/OS

CA Data Compressor for DB2 for z/OS

CA Database Analyzer™ for DB2 for z/OS

CA Detector® for DB2 for z/OS

CA Index Expert™ for DB2 for z/OS

CA Insight™ Database Performance Monitor
for DB2 for z/OS

CA Plan Analyzer® for DB2 for z/OS

CA Rapid Reorg® for DB2 for z/OS

CA SQL-Ease® for DB2 for z/OS

CA Subsystem Analyzer for DB2 for z/OS

CA Database Analyzer™ for IMS for z/OS

CA Database Organizer™ for IMS for z/OS

CA DC Monitor Extensions for IMS for z/OS

CA Insight™ Database Performance Monitor
for Distributed Databases

CA TSreorg for Distributed Databases

CA's Database Performance Management provides a complete suite of tools that you can rely on for end-to-end performance monitoring, analysis and management of your mainframe and distributed databases including the applications, systems, and business processes they touch.

Overview

CA's Database Performance Management provides real-time, 24x7 monitoring, sophisticated filtering and correlation of the events that impact performance across multiple platforms. By capturing detailed metrics and providing robust database analytics and automated tuning and problem resolution technologies, CA's Database Performance Management enables an enterprise to consistently deliver high-speed database performance.

Benefits

CA's Database Performance Management provides in-depth insight into the performance of each database and can monitor a rich set of parameters, derive the root cause of problems and take corrective actions or notify administrators.

Streamline your tuning and troubleshooting processes and take remedial actions when a problem occurs, significantly enhancing enterprise-wide database and application performance.

CA Advantage

CA's Database Performance Management works in concert with other CA Database Management administration, backup and recovery, and design and modeling capabilities to automate and simplify a wide variety of mainframe and distributed database performance management tasks.

Seamlessly transition to CA's Database Administration products directly from CA's Database Performance products to save time and reduce errors. Native integration into CA's IT Management solutions provides even greater visibility into the IT stack for performance bottleneck identification and remediation.

IT managers and industry analysts estimate that poorly performing SQL is responsible for as much as 75-80% of response-time SLA failures.

Optimizing Database and Application Performance for Business Success with CA's Database Performance Management

Your applications cannot run efficiently if your databases and database queries are not well-tuned and performing at an optimized level. If your databases and queries aren't running efficiently, your business suffers. The problem is compounded because it can be very difficult to understand where to start looking for the root of the problem. You may even have difficulty ascertaining whether the performance issues that you or your users, customers, partners or vendors are experiencing are database-related.

MAINTAINING BUSINESS CONTINUITY AND SERVICE LEVEL AGREEMENTS In order to achieve or exceed service level agreements (SLAs), you are faced with maintaining or improving database performance in the face of database growth, added complexity and extraordinary demands placed on your data infrastructure by applications that range from highly sophisticated and demanding to poorly written.

Finding the root cause of performance issues is essential to fixing them. Often isolating, evaluating and addressing symptoms can mean that the main cause goes unaddressed, only to cause problems again. DBAs need the ability to navigate seamlessly through vast amounts of performance information and quickly identify the actual cause of the performance problem.

BEING PROACTIVE AND NOT JUST REACTIVE Too often, DBAs are so busy reacting to problems that they have little time for proactive performance management. To evolve from reactive to proactive performance management, organizations must continuously monitor performance, use predictive modeling where possible, and pinpoint the root cause of emerging problems so they can prevent genuine performance problems.

DESIGNING EFFICIENT DATABASES AND APPLICATIONS Designing and developing efficient databases and applications is not easy. You have to evaluate the potential performance of competing designs, spend hours coding access-perfect SQL, evaluate different indexing scenarios and probe database and subsystem interactions. Industry analysts estimate that poorly performing SQL may account for 70 - 80% of response-time SLA failures. Inefficient index schemes are another prevalent cause of poor performance.

When your database, SQL, indexes, IO calls and other performance drivers are not well-tuned, your business suffers. Even the most well-designed applications slow down after they've been in production for a while because the database environment and applications constantly change and can outgrow the original design parameters.

MANAGING DATABASE CHANGE Your applications and business processes are constantly evolving. As applications change in order to adapt to your evolving business processes, the supporting database must change as well. Applications are constantly adding and modifying data. In this environment of constant growth and added complexity, database objects become disorganized; and when this happens, all business processes that touch the databases are affected.

Achieve Peak Performance

CA's Database Performance Management provides in-depth insight into the performance of each database and can monitor a rich set of parameters, derive the root cause of problems and quickly take corrective actions or notify administrators. You can streamline your tuning and troubleshooting processes and take remedial actions when a problem occurs, significantly enhancing enterprise-wide database and application performance enterprise-wide.

CA's Database Performance Management provides a robust suite of tools that you can rely on for end-to-end performance management of your applications and systems.

CA Bind Analyzer™ for DB2 for z/OS

In highly dynamic DB2 for z/OS environments, including those used for development and testing, unnecessary binds can result in excessive catalog contention, affecting developer productivity and DB2 performance. CA Bind Analyzer for DB2 for z/OS reduces resource contention during the bind process and coordinates successful application preparation by determining if a program being recompiled has any SQL changes. If there are no SQL changes, a bind is generally not required and can be skipped. At program runtime, CA Bind Analyzer also helps coordinate the different elements that must be in sync for successful program execution.

- Minimize overhead by limiting the number of BINDs that are executed
- Synchronize database request modules (DBRMs) and load modules
- Enhance precompile and build processing right in the application build JCL
- Keep the application development process flowing via BIND management
- Improve application performance through well-tuned access paths
- Eliminate errors associated with rebinding applications
- Integrate with CA Plan Analyzer® for DB2 for z/OS to improve productivity and provide additional information

CA Data Compressor for DB2 for z/OS

Data compression saves DASD space, but it often does so at the expense of CPU resources. One of the most critical issues surrounding data compression is this trade-off between the DASD space saved and the CPU time necessary to run the routine. Using sophisticated algorithms, CA Data Compressor for DB2 for z/OS provides a variety of CPU-efficient routines for compressing data to help save valuable disk space.

- Determine how effectively a routine will perform with a dataset
- Perform an analysis against the table itself, or against an image copy, avoiding table contention during table analysis
- Save disk space resources while using a minimal amount of CPU time
- Add compression routines to existing tables
- Use online analysis for testing and comparison of compression routine
- Test compression routines
- Simplify testing and implementation of compression routines

CA Database Analyzer™ for DB2 for z/OS

To maintain an efficient DB2 system, DBAs must tune object definitions, monitor and forecast DASD space usage and growth, validate object integrity, and schedule and execute appropriate DB2 utilities. CA Database Analyzer for DB2 for z/OS performs "lights out" analysis and keeps DB2 databases performing optimally by giving you the ability to automate object management, collect vital statistics and help verify the integrity of DB2 data.

With CA Database Analyzer, DBAs are empowered to make expert decisions regarding database growth, organization, and performance.

- Save time by updating catalog statistics, logging changes and archiving statistics without launching DB2 utilities
- Automatically keep DB2 objects in top condition
- Anticipate and avert resource problems by collecting and automatically analyzing predictive, maintenance and utility statistics
- Automatically trigger actions based on collected statistics
- Quickly identify problems using specialized reports
- Automatically update DB2 catalog statistics
- Streamline ad hoc maintenance
- Easily move objects to reduce contention
- Integrate with CA Rapid Reorg® for DB2 for z/OS

CA Detector® for DB2 for z/OS

In enterprises that rely on their DB2 database applications, IT teams must locate, analyze and control resource-hungry or poorly performing DB2 applications and SQL to optimize performance and minimize system resource consumption. This is particularly critical for web-based applications, ERP systems and data warehousing environments with heavy use of dynamic SQL. CA Detector® for DB2 for z/OS allows you to identify and address resource-intensive SQL, focusing your performance tuning efforts on the areas that need the most help. Using CA Detector, you can drill down to the level that you need, conserve resources and perform detailed application performance analysis—all without conducting inefficient and high-cost SQL performance traces.

- Collect static and dynamic SQL from a variety of sources including ODBC and JDBC
- Quickly and easily identify dynamic or static resource-intensive SQL
- Evaluate and drill down application performance at multiple levels of granularity
- View real-time and historical performance data
- Optimize performance using suggested corrected actions
- Optimize SQL and conserve resources
- Perform detailed application performance analysis
- Integrate with CA Plan Analyzer for DB2 for z/OS, CA Subsystem Analyzer for DB2 for z/OS, and CA Index Expert for DB2 for z/OS

CA Index Expert™ for DB2 for z/OS

Few database design elements have more impact on DB2 application and business process efficiency than fully optimized indexes. CA Index Expert for DB2 for z/OS helps optimize indexes and improve database performance by intelligently evaluating index changes without the manual effort of a lengthy index analysis process. Analyze an entire application quickly and efficiently, and make intelligent index design decisions.

- Analyze SQL statements used in applications, along with execution frequency statistics
- Compare the analysis against a set of indexing rules and recommend the most appropriate indexes to optimize application performance
- Save time and reduce errors by analyzing complex SQL column dependencies and reviewing SQL to determine how DB2 objects are referenced
- Optimize indexes for static and dynamic SQL
- Improve application and business process efficiency
- Create practical and convenient reports
- Integrate with CA Plan Analyzer® for DB2 for z/OS, CA Subsystem Analyzer for DB2 for z/OS and CA Detector® for DB2 for z/OS

CA Insight™ Database Performance Monitor for DB2 for z/OS

Performance is a critical issue due to the increasing complexity of applications and the increasing size of databases. In a business world, where success and failure may hinge on the speed of your response to the customer, it is imperative to ensure that your DB2 subsystems, applications and business processes are performing at their best. CA-Insight for DB2 for z/OS allows you to monitor DB2 system and application performance in real-time and quickly gets to the bottom of any performance problems or bottlenecks.

- Perform real-time DB2 system and application monitoring
- Monitor system, application, and SQL exceptions
- Automatically issue alerts when exceptions occur
- Drill down to the user and application levels using enhanced focus and trace qualification
- Customize monitoring using Insight Query Language
- Retrieve and explain static SQL text during execution and analyze bind impact analysis
- Display near-term system intervals stored in online system logs
- Include the ability to invoke sampling with system statistics components
- Provide DB2 performance information to CA SYSVIEW® Performance Management

CA Plan Analyzer for DB2 for z/OS

It is frustrating and time-consuming to analyze SQL statements and their complex access paths using conventional methods. CA Plan Analyzer for DB2 for z/OS not only provides in-depth analysis of SQL from a variety of sources, but streamlines the plan analysis process and reduces the time and effort involved in SQL analysis by eliminating unnecessary manual intervention and applying expert rules to the SQL. CA Plan Analyzer provides a robust set of SQL analysis, management, monitoring and tuning services that improve productivity and performance results.

- Present enhanced analysis in clear, easy-to-read reports
- Analyze SQL from multiple sources
- Compare SQL and access paths to find differences
- Improve SQL with expert system rules
- Compare versions of SQL and their access paths
- Create catalog statistics suited to your environment
- Explain complex DB2 plans in easy-to-understand reports
- Customize analysis to individual skill levels
- Integrate with CA Index Expert for DB2 for z/OS, CA Detector for DB2 for z/OS, CA Insight for DB2 for z/OS, and CA SQL-Ease for DB2 for z/OS

CA Rapid Reorg® for DB2 for z/OS

The information stored in your DB2 for z/OS databases is vital to the operation of your organization. Unfortunately, constant additions, deletions and updates to that information cause the data to become disorganized. Retrieving disorganized data requires more I/Os, is time-consuming, costly and impacts the end-user experience and the solution is a disciplined approach to reorganizing your DB2 data. CA Rapid Reorg for DB2 UDB for z/OS helps you perform rapid and effective DB2 reorganizations to improve your data availability and performance and save valuable resources. CA Rapid Reorg allows you to choose either an offline or online reorg to help maintain SLAs. You can efficiently manage all the related processing, including producing up to eight image copies, collecting database statistics and updating the DB2 catalog in just one execution and with just one data pass.

- Minimize I/O, reduce workspace requirements
- Use advanced VSAM I/O techniques
- Perform reorgs on multiple tablespaces or indexes
- Reorganize one, many, or all partitions in a single job
- Interleave data rows for multiple tables as they are reorganized
- Determine optimum time to switch datasets after reorg using CA's method for online reorg dataset switching
- Integrate with CA Quick Copy for DB2 for z/OS, CA Database Analyzer for DB2 for z/OS, CA Insight for DB2 for z/OS and CA Fast Load for DB2 for z/OS

CA SQL-Ease® for DB2 for z/OS

Testing during development can drastically drain DB2 resources. Without an easy way to test SQL statements and validate their performance during the development process, issues are often not uncovered until the coding is finished and testing begins. This process reduces time to market, uses valuable data and system resources, and is a cumbersome way to develop SQL. CA SQL-Ease for DB2 for z/OS gives you the power and versatility to generate, test and analyze embedded SQL for DB2 applications, all from within an ISPF edit session without needing to compile/re-compile, link, bind and execute each iteration. Conveniently interface with CA SQL-Ease during the application development cycle by entering a single command.

- Generate clean, clear and highly efficient SQL code for C, COBOL, Assembler, or PL/1 programs
- Quickly and automatically produce concise, syntactically valid, error-free SQL in the least possible time
- Explain SQL from within an ISPF edit session
- Easily obtain DB2 access path information
- Enhance DB2 performance
- Conserve valuable resources while testing
- Integrate with CA Plan Analyzer for DB2 for z/OS

CA Subsystem Analyzer for DB2 for z/OS

The system is running slow, and users are complaining. It's time to tune DB2, but where do you start? It's difficult to know how your critical I/O resources—the DB2 objects, DASD volumes, and buffer pools in your subsystem—are being taxed. And it's even harder to judge whether the subsystem itself is optimally tuned. CA Subsystem Analyzer for DB2 for z/OS takes the guesswork out of this task so you can proactively analyze and tune your subsystem with speed and precision.

- Get a complete subsystem picture using detailed performance monitoring statistics
- Consolidate information in a clear and concise view to quickly drill down into the detail underlying subsystem performance
- Use sampling technology to limit the demand on DB2 resources, thereby reducing the overhead involved in collecting critical performance information
- Accurately track DB2 buffer pool activity with low resource overhead
- Identify problems in minutes, not hours with real-time monitoring
- Easily identify frequently used DB2 objects
- Speed subsystem monitoring and tuning
- Integrate with CA Detector for DB2 for z/OS and CA Index Expert for DB2 for z/OS

CA Database Analyzer™ for IMS for z/OS

You have a shrinking window of opportunity to implement database validation processes. Hardware and software errors can result in data corruption within an IMS database. Detecting errors quickly is crucial to maintaining data integrity, availability and accuracy. CA Database Analyzer for IMS for z/OS detects, analyzes and monitors IMS databases quickly and with full data integrity.

- Perform total database integrity checking, including pointer and control data
- Check block, control interval (CI) and pointer integrity and report errors quickly
- Monitor, tune, and optimize using detailed database reports
- Analyze full function and fast path databases
- Analyze and report on free space
- Scan the database at maximum device speeds
- Integrate with the IMS Image Copy utility or CA Database Copier™ for IMS for z/OS

CA Database Organizer™ for IMS for z/OS

To gain the maximum benefit from data stored in IMS databases, you must be able to utilize this data in multiple applications and diverse environments. Due to the structure of IMS data, it can be challenging and time-consuming to extract IMS data for export to data marts and data warehouses, for conversion and migration to relational databases, or for use by applications outside of IMS. CA Database Organizer for IMS for z/OS enables high-speed unloading and reloading of IMS databases resulting in significantly improved database performance. CA Database Organizer gives you greater control over the segments in a database with a user exit to examine, modify and delete segments, enabling you to easily and safely make structural changes.

- Quickly unload and reload databases
- Extract only the data you want and format the resulting sequential file
- Convert from one database type to another
- Reduce CPU usage and database reorganization time
- Perform online or offline reorgs with unique SAFTYNET feature
- Easily and safely make structural changes
- Control space management during the reload process
- Use full database recovery control (DBRC) support to ease recovery
- Support full function and fast path databases
- Integrate with CA Secondary Index Builder for IMS for z/OS and CA Database Analyzer for IMS for z/OS



CA DC Monitor Extensions for IMS for z/OS

In today's business environment, a finely tuned database is a competitive advantage. IMS databases and transactions must be monitored and tuned to ensure performance objectives are achieved. Although the standard IMS Monitor captures much of the required information, important data is still missed, particularly IMS fast path data. CA DC Monitor Extension for IMS for z/OS allows you to capture all the data.

- Performance and tuning data above and beyond IMS Monitor
- Additional critical data recorded to the IMS Monitor dataset
- Minimal or no transaction elapsed time overhead
- Fast path systems and applications supported
- Detailed performance and tuning data on disk logging subsystem

CA Insight™ Database Performance Monitor for Distributed Databases

The amount of data being generated by applications and stored in a wide array of databases continues to grow, often unchecked, while databases themselves have become extraordinarily complex. With business-critical data residing in numerous locations and different database types, DBAs are challenged to monitor all these database systems, meet existing service levels and discover ways to continually improve performance.

CA Insight Database Performance Monitor for Distributed Databases is a browser-based multi-database solution that helps proactively detect and prevent database issues before they become problems and impact business. This one product automates performance monitoring, data analysis and management of SQL Server; Oracle; Sybase; and DB2 for Linux, UNIX, and Windows (LUW) databases.

- Centrally monitor and manage the performance of database internals, CPU, memory, I/O, and subsystem metrics, and capture database SQL all from one browser-based console
- In a single display, monitor key performance statistics and database quality of service across database types
- Enable quick problem resolution through analysis of highly granular metrics
- Bring new level of intelligence to management with predictive capabilities
- Group and manage resources using business process views
- Provide real-time monitoring with automatic notification by pager or e-mail and automatically escalate to other personnel if an alarm is unanswered
- Choose agent or agentless monitoring technologies
- Integrate with the CA Database Command Center through a fully web-enabled customizable user interface
- Integrate with CA Unicenter Network and Systems Management (Unicenter NSM)

CA TSreorg for Distributed Databases

Although the price of storage continues to drop, management costs increase with each gigabyte added. Even with the latest versions, databases require routine maintenance to recover wasted storage that can prematurely necessitate expensive CPU and storage upgrades. As databases grow larger and more complex, traditional reorganization methods prove inadequate for maintaining availability. CA TSreorg for Distributed Databases offers advanced technology and integration to routinely recover wasted storage with little or no impact to application service levels. This single product provides database support for Oracle, SQL Server and DB2 on Linux, UNIX and Windows.

- Perform fast reorganization of fragmented tables, indexes, tablespaces and partitions
- Automate space recovery while business applications run
- Perform reorganizations online while database applications run
- Perform multiple reorganizations concurrently
- Be proactive with automated failure prediction and advanced recovery
- Enable manageability from virtually anywhere through a Web portal or Windows console
- Integrate with CA Database Command Center and CA Fast Unload® for Distributed Databases

Be Proactive with CA's Database Performance Management

CA's Database Performance Management provides real-time, 24x7 monitoring, sophisticated filtering and correlation of the events that impact performance across multiple platforms. By capturing detailed metrics and providing robust database analytics and automated problem resolution tools, CA's Database Performance Management enables you to consistently deliver optimized database, application, and business process performance across your enterprise.

Be Proactive Not Just Reactive

CA's Database Performance Management enables administrators to view and drill down through layers of historical performance data to quickly identify the performance bottleneck and analyze events and pinpoint performance bottlenecks.

- Minimize operational risk by analyzing trends and making predictions
- Report on database assets and trends in real time
- Send automatic notification to administrators by pager, email or other methods when performance issues are detected and predefined thresholds are triggered.

Design Efficient Databases and Applications

CA's Database Performance Management assists you in designing effective databases and applications and in coding streamlined SQL.

- Streamline SQL interactions and reorganize your databases to keep your applications and business processes running at peak performance
- Quickly generate syntactically valid SQL statements and write the most efficient, accurate SQL in the least possible time
- Address inappropriately indexed databases
- Tie database assets to real-world business processes

Manage Change

CA's Database Performance Management gives you the tools needed to manage database change and automate performance management tasks.

- Manage change through monitoring, comparison, synchronization and reorganization of database structures that reside on different subsystems
- Decouple database-specific technology from the central performance monitoring and management technology

Maintain Business Continuity and Service Level Agreements

CA's Database Performance Management allows you to keep your business processes running during database monitoring and reorganization tasks.

- Maintain internal and external SLAs by performing tasks in around-the-clock environments while data remains fully available to users
- Reduce downtime and associated costs that occur during database performance monitoring operations

- Take advantage of parallel multitasking technologies that reduce indexing time
- Minimize disruptions through speedy and simple reorganizations

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Database Performance Management is an integral part of CA's Database Management solution, and an important part of CA's overall approach to transforming IT management. CA unifies and simplifies IT management across the enterprise for greater business results.

CA Technology Services™ and our partners can help you assess your current IT situation, define your goals and implement solutions to gain measurable results. To keep your CA solutions operating at peak performance, CA support delivers unparalleled technical and customer support worldwide, and we offer training and certification through CA Education.

Next Steps

Consider the following when analyzing your database administration needs:

- Are your database and the applications and business processes that touch the database running at optimal performance levels?
- Are your SLAs suffering due to poorly performing SQL?
- Are you spending too much time chasing and repairing performance problems?
- Do you have sufficient DBA resources with the skills required to manage growing database and SQL analysis, change management, reorganization and compression efforts?
- Would you benefit from predictive information about database and application performance that would allow you to be proactive in preventing performance failures and bottlenecks?
- Are you able to maintain internal and external SLAs while running reorgs, analysis, compression and other tasks?
- Are you able to effectively manage database change?
- Do you have both mainframe and distributed systems and have at least one database requiring performance analysis and management?

To learn more, and see how CA software solutions enable organizations to unify and simplify IT management for better business results, visit ca.com/products.

CA, one of the world's largest information technology (IT) management software companies, unifies and simplifies the management of enterprise-wide IT for greater business results. Our vision, tools and expertise help customers manage risk, improve service, manage costs and align their IT investments with their business needs.

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Learn more about how CA can help you transform your business at [ca.com](https://www.ca.com)

