C\Trek™

Fine tune your performance ™

CICS PERFORMANCE TUNING FOR MVS AND VSE

C\TREK EXPERT CICS PERFORMANCE TUNER™

THE C\TREK EXPERT CICS PERFORMANCE TUNER™ IS A TOOL USED BY MAINFRAME SYSTEM PROGRAMMERS TO OPTIMIZE CICS SYSTEM PERFORMANCE IN A FRACTION OF THE TIME REQUIRED WHEN USING MORE TRADITIONAL CICS MONITORS. BY AUTOMATING THE ANALYSIS OF VAST AMOUNTS OF CICS DATA, ISOLATING PERFORMANCE PROBLEMS, AND MAKING EXPERT RECOMMENDATIONS FOR CORRECTIVE ACTION, IT ENABLES IBM DATA CENTERS TO SAVE VALUABLE STAFF TIME, DELAY SYSTEM UPGRADES, AND TRANSITION TO A MORE PROACTIVE APPROACH TO CICS SYSTEM PERFORMANCE MANAGEMENT.

C\TREK™ HELPS YOU

- Recover wasted system resources (CPU cycles, disk space, virtual and real storage)
- Avoid or delay expensive mainframe system capacity upgrades
- Reduce CPU-based system software expenses
- Save valuable staff time with expert advice that reduces CICS tuning from days or weeks to hours
- Optimize mainframe resources with less experienced system programmers
- Improve business application response time
- Reduce critical business application downtime
- Orient and train new staff on the entire CICS operating environment
- Provide application programmers with a useful tool for optimizing system software performance
- Transition from a reactive break/fix mode to a more proactive performance management discipline

Proactively Manage Performance in Increasingly Complex Environments

Traditional manually intensive CICS performance monitoring approaches were adequate when mainframe processors were standalone, resources and I/O devices were simple, and experienced software programmers were plentiful. Today's data center environments however, are increasingly more complex with extensive multiprocessor configurations running different operating systems and utilizing a wide variety of internal and external system resources. They require a much less time consuming and more sophisticated approach to performance tuning.

At the same time, current economic realities are requiring data center managers to be more efficient, more productive, and more cost conscious. Capital purchases are being closely scrutinized and experienced programmer time is scarce. Managers are being called upon once again to do more with less while keeping mission-critical applications running smoothly.

C\TREK™ can help.

The C\TREK Expert CICS Performance Tuner™ enables mainframe data center managers to efficiently recover wasted system resources and delay expensive mainframe upgrades. It is dramatically different from traditional CICS monitors because it automates the analysis of vast amounts of CICS data, highlights performance problems, and makes specific recommendations for improving performance. This enables less experienced system programmers to manage a task more commonly reserved for seasoned pros while saving valuable time in the process. Efficient identification and correction of CICS performance problems enables a shift from reactive crises management to a more proactive approach to mainframe performance management.

"This is the best tool I've ever seen. The value of the information is what makes C\TREK different from other similar tools. It captures everything."

— Project Leader, national insurance provider

Not Another Performance Monitor

C\TREK Expert CICS Performance Tuner™ serves as a valuable compliment to more traditional CICS monitors. In fact, the vast majority of customers using C\TREK Expert CICS Performance Tuner™ also employ one or more CICS performance monitors.

CICS performance monitors run in real-time using valuable CPU cycles to collect a vast amount of CICS operating statistics regarding the state of the system. This immense data set is used by highly experienced system programmers when a system begins to degrade to analyze performance bottlenecks and determine where adjustments should be made. This typically take several days or weeks.

Whereas C\TREK's™ performance tuning tool is used proactively to analyze a vast amount of information and identify performance tuning opportunities using expert "rules-of-thumb." Problem areas are presented to less experienced system programmers along with detailed recommendations for improving CICS resource utilization and response time. System tuning is typically done in a few hours.

VSAM file tuning, for example, is typically accomplished using a traditional performance monitor by system programmers with extensive VSAM tuning experience. Statistics such as record count, type of accesses, and I/O counts are used on a file-by-file basis to identify system problems. The system programmer manually applies formulas to each file one at a time to correct file management problems. This can be so tedious and time consuming that many mainframe operations chose to avoid tuning altogether until severe problems arise.

With the C\TREK Expert CICS Performance Tuner™, VSAM file tuning is accomplished by less experienced system programmers as part of an ongoing performance tuning discipline. Individual files may automatically be evaluated, or the entire collection may be analyzed at once using expert "rules of thumb." Areas in need of attention – such as over allocation of disk space, a bad CISZ for the data or index, or a free space percent that is not large enough – are highlighted for corrective action. Specific recommendations for tuning steps are presented by C\TREK™ such as the parameters that should be used to define a cluster. Tuning is performed in a fraction of the time compared to traditional monitors. For example, a multinational bank recently used C\TREK™ to tune 33 production CICS systems and hundreds of VSAM files in less than a week – a process that would have taken several weeks to perform using a traditional monitor.

Performance Monitors	C\TREK Performance Tuning
Run continuously using valuable **CPU cycles**	Uses CPU cycles only when tuning is performed
Collect vast amounts of data to be analyzed by highly experienced system programmers	**Analyzes** vast amounts of CICS operating data and isolates performance tuning opportunities
Tuning requires detailed analysis and tedious **manual** inspection	Applies expert **"rules of thumb"** to identify, highlight, and summarize tuning opportunities
Corrective action is determined by **highly experienced** system programmers	Expert system makes recommendations for corrective action by **less experienced** staff
Take **days or weeks** to adequately tune a CICS system	Reduces CICS tuning to a matter of **hours**
Typically used in **crisis mode** when system performance has begun to degrade and problems occur	Used **proactively** to keep the system operating at optimal performance

Quickly Identify and Correct CICS Performance Issues

C\TREK Expert CICS Performance Tuner™ provides complete coverage of the CICS environment as well as important external enterprise systems. A number of the more important features include the following:

Parameter Definition Tuning. C\TREK™ reviews all the parameters that have been specified for the system and resources such as transaction and program definitions. For example, the use of the "storage clear" command in the transaction definition that adds additional CPU overhead is identified by C\TREK™. In addition, C\TREK™ analyzes the System Initialization Table parameters and identifies those parameters that should be reviewed to improve performance. It also reviews the LE options parameters (CEECOPT) and Java definitions and identifies those that require attention.

Buffer Tuning. C\TREK™ improves transaction response times by fine tuning look-aside hit ratios in both NSR and LSR files. It reviews the string allocation by pool and makes recommendations as to how many should be allocated. It checks for NSR files that don't have the proper BUFNI allocations. It also includes a series of transactions that help identify poor resource utilization such as buffer fragmentation, buffer monopolization by a particular file, or incorrect pool initialization. C\TREK™ is the only tool that identifies how many buffers within an LSR pool are allocated to each file. This makes it easy to identify when a particular file is monopolizing a particular buffer in a pool.

VSAM File Tuning. C\TREK™ makes the tuning of VSAM files easy by identifying problem areas that would require a significant amount of system programmer time using other methods, such as traditional monitors. In addition to assisting in the buffer tuning for NSR and LSR files, C\TREK™ provides recommendations on tuning the Cluster Definition parameters to ensure that the proper parameters are used, that sufficient/correct free space is allocated, that the data and index CISZ are optimum, that the correct CA size has been defined, that the file is not over/under allocated, and identifies files that should be reorganized. Recommendations for the file cluster definition are provided.

DB2 Tuning. C\TREK™ provides recommendations and information on how the CICS-DB2 connection may be improved by providing statistics that help determine the number of threads allocated (protected and unprotected), reconciliation of threads assigned to the pool, DB2 Entries and Command versus the connection thread limit, and SIT MAXOPENTCBS parameter and the reuse of threads.

Abend Handling. The C\TREK™ abend handler captures information regarding typical ASRA (program check abends) but more importantly, it captures information about storage violations and short on storage (SOS) conditions. With the initial information captured regarding the storage violation, the user can quickly determine the active transactions, the damaged area, and the program and task involved. In some cases, this avoids having to analyze a system dump. In the case of SOS conditions, the abend handler can identify the tasks involved, the amount of storage allocated and used by task, and the amount of storage requested that caused the SOS condition.

Other Tuning Areas. There are other areas within CICS that can affect resource use by CICS TS such as storage below the line. C\TREK™ has a function to review up to 180 different potential problems that could affect performance of the CICS system.

Learn more at CTrek.com or call 407.469.3600

CAPABILITIES & ADVANTAGES

- Automates analysis of large amounts of CICS operating data to identify performance problems
- Summarizes and highlights problem areas and provides specific tuning recommendations
- Provides complete coverage of the entire CICS environment
- Covers analysis and tuning of SIT parameters, VSAM files, LSR pools, CICS and z/OS control blocks, Temporary Storage, DB2, and Abend handling
- Provides information about external areas that affect CICS performance such as CPU utilization, paging, Task I/O Table, Auxiliary Storage Manager, address space priorities and VTAM information
- Breaks CPU utilization down by CICS, DB2, TCP/IP, WebSphere, MQSeries, and operating system
- Provides direct access to CICS areas and control blocks to facilitate problem analysis
- Unmatched technical support from CICS performance tuning experts

C\TREK™ was created in response to specific customer performance tuning requirements. Customer requests for additional features are continually evaluated and incorporated into the product.

"We've come to rely heavily on C\TREK's file tuning recommendations and Abend information."

— Systems Programmer, multinational bank

CASE STUDY: C\TREK Expert CICS Performance Tuner™ was used to fine-tune the performance of CICS systems at a large commercial bank. The bank was growing at a rate of 30-35% per year and had concerns about CPU capacity, system reliability, throughput in peak periods, and response time degradation. A CPU upgrade had been scheduled in approximately ten months as CPU utilization was increasing continuously on a monthly basis.

While other tools were available for tuning, C\TREK™ was used because of the ease and speed with which problems and corrective action could be identified. Specific tuning objectives were to eliminate storage violations, optimize the on-line VSAM subsystem, improve DB2 access within CICS, reduce CPU time wherever possible, and improve response times and system throughput.

Prior to using C\TREK™, the bank had conducted a tuning project using their installed performance monitor. After the system had been tuned with C\TREK™, overall CICS CPU utilization for the 33 CICS systems was reduced by nearly 10%. Effective CICS and overall CPU savings were actually greater when considering that transaction volumes had increased by 6.7 million transactions or 15% during the tuning initiative.

Supported Environments

C\TREK™ is available for all major CICS/TS releases from IBM. C\TREK™ runs under CICS/ESA and CICS/TS and associated operating system environment (z/OS, OS/390 or MVS/ESA) using Language Environment (LE). C\TREK™ is also available under CICS/TS in a VSE environment.

New versions are delivered with the general availability of new IBM CICS releases or versions. New versions can be downloaded via the Web which frees system programmers from having to maintain the product via the application of PTFs.

C\TREK's™ products are supported with highly responsive expert advice (via phone or email) for customers in need of assistance with technical support, CICS performance tuning, or capacity planning.

What Customers Have To Say

- 90% of customers surveyed said they would be "Extremely Likely" to recommend C\TREK to a friend or colleague (average ranking of 9.6 out of 10).
- 89% of customers surveyed said they would be "Extremely Likely" to renew their C\TREK software license (average ranking of 9.7 out of 10).
- 90% of customers surveyed said C\TREK is "Extremely Effective" in meeting their CICS performance management requirements (average ranking of 9.3 out of 10)

"C\TREK lets you see everything that is wrong with your system and provides recommendations about what to do about it. It dramatically cuts down your research time to be proactive and fix problems."
Systems Programmer, national bank

"There's nothing else quite like it. We're setting up a process to continuously monitor and improve our operational systems and C\TREK will be at the center of it." Systems Programmer, national insurance provider

"No one offers the same solution as C\TREK."
Operating Systems Engineer, multinational bank

"There's nothing it can't do in terms of looking at CICS resources."
Senior Systems Programmer, global marketer of consumer and commercial products

"C\TREK takes away the guesswork of tuning CICS. It gives a summarized view with lots of detailed information." Assistant Vice President, technology solutions provider to large financial institutions

About C\Trek™

C\TREK Corporation provides CICS performance tuning software, consulting, and training services to IBM mainframe data center managers and system programmers. C\TREK Corporation was founded in 2001 by CICS performance tuning experts to dramatically streamline the process of CICS system optimization. The depth of their CICS performance tuning expertise is widely regarded throughout the industry. C\TREK™ expert tuning software and performance tuning consulting services are used by data center managers to recover wasted CICS system resources, delay expensive system upgrades, and transition to a proactive CICS performance management discipline.

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