

# StarTool I/O

The most comprehensive and cost-effective way to achieve automated system tuning

As a z/OS Performance professional, you have long known that the best manual tuning cannot produce the performance savings of an automated and dynamic tuning utility. However, until now, no one single integrated and comprehensive tool existed to tune all of your I/O processing with one easy to maintain approach. Serena StarTool I/O is the most comprehensive, cost-effective, fastest and easiest way to achieve total, automated system tuning.

Serena StarTool I/O is an integrated optimization system that automatically and dynamically tunes the major components of z/OS's I/O processing functions to achieve dramatic throughput improvements both in batch and on-line. It is the ultimate I/O throughput optimizer for z/OS. It is based on a proprietary analysis and intelligence gathering process during OPEN processing and I/O request to any VSAM or SAM (QSAM, BSAM and EXCP) dataset. Serena StarTool I/O delivers the performance needed for applications that operate in today's fast-changing business environment.

## VSAM Optimization

Eighty percent (80%) of all VSAM mainframe applications use Non-Shared Resources (NSR) because most only support NSR. Serena StarTool I/O allows programs written in any language (including COBOL) to use Local Shared Resources (LSR) when the program is dynamically or randomly accessing a VSAM file. Serena StarTool I/O builds the optimal number of LSR buffers to maximize performance. Most indexes are placed in main memory to reduce the number of physical I/Os to access a logical record. If sequential processing is requested, the number of NSR buffers for read-ahead processing is provided. LSR and NSR buffers are built above the 16M line to alleviate virtual storage constraints in the private area. For LSR, expanded storage using hyperspace buffering is automatically and transparently used when the file size is larger than the LSR pool.

## KEY BENEFITS

- Automates I/O tuning for the z/OS
- Reduces analyst time devoted to I/O tuning
- Can reduce processing time by 30–50%
- Dynamically adjusts performance criteria and operating conditions based on I/O requests
- Intelligence database contains industry standard I/O performance information
- Easy to use, no program or JCL changes required

## Dynamic Memory Management

For those programs that are coded in assembler and already use native LSR, the perfect quantity of above the 16M line buffers and hyperspaces are transparently allocated based on file size. For all LSR processing (NSR-LSR or LSR native), a separate LSR pool is used for each file (up to 255 LSR pools transparently allocated) to eliminate buffer stealing. When applications change processing modes from Direct to Sequential, Serena StarTool IOO detects this and re-optimizes tuning parameters.

## Sequential Optimization

Serena StarTool IOO dynamically optimizes SAM files to provide the best throughput and response time for I/O requests. Elapsed time savings of up to 75% have been obtained through IOO's non-VSAM optimization of an application.

## Blocking

Most sequential QSAM, SAM and EXCP processing is highly dependent upon efficient block sizes. System Determined Block sizes cannot reblock all of a shop's sequential files. The Serena StarTool IOO replaces or enhances SDB's reblocking function and performs reblocking on all sequential data sets, including managing programs with hard-coded DCB's. The product reblocks all device types including tape data sets and reblocks without any JCL changes. The physical block size is attached dynamically and automatically managed regardless of what logical block size the program is dependent upon. Therefore, even all SORT products, F O CUS files, SAS sequential files and all QSAM and BSAM sequential files are optimized.

Serena StarTool IOO is smart enough to reblock only 35% of all your eligible data sets but achieve 90% of the potential savings.

## Buffer Management

Serena StarTool IOO dynamically optimizes buffers and Start I/O 's for QSAM, BSAM and sequential EXCP I/Os. Specifically, it optimizes physical sequential data sets, permanent and temporary, including data sets generated by most utilities (e.g., IEBCGENER, etc.). It improves QSAM, BSAM and EXCP performance as much as 75%, saves up to 50% elapsed time for DB2 Unloads and Reloads and saves up to 40% elapsed time for IDMS sweeps.

## Built in Intelligence

Serena StarTool IOO contains a database of information containing parameters and values that deliver the best I/O performance by type of device by type of access. Customer can easily override the rules by keying in their own parameters, or by excluding a dataset or job name from Serena StarTool IOO's optimization process. Most users, however, use the default parameters and achieve outstanding results from it's I/O optimization.

## Summary

This solution automates the I/O tuning efforts, increases the level of benefits received from practicing performance management and boosts user productivity. By using the Serena StarTool IOO product, enterprise IT organizations can help to ensure application efficiency and responsiveness throughout the life of their z/OS based mission-critical applications, thereby controlling costs, satisfying customers, and supporting growth. Before you decide you need a new CPU, additional DASD or start a manual system tuning project, find out your true capacity and performance potential with the Serena StarTool IOO.



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Serena Software provides Orchestrated application development and release management solutions to the Global 2000. Our 2,500 active enterprise customers, including a majority of the Fortune 100, have made Serena the largest independent Application Lifecycle Management (ALM) vendor and the only one that orchestrates DevOps, the processes that bring together application development and operations. Headquartered in Silicon Valley, Serena is a portfolio company of HGGC, a leading middle market private equity firm.