



Never Be Lost Again

Tuning VSAM with CR+ Map

Elliot Hamilton and Ron Ferguson

With effective VSAM tuning, you can achieve significant cost savings by freeing resources and improving productivity. However, you first need to find out what your batch and CICS KSDS files are doing under the covers. The Catalog RecoveryPlus (CR+) Map command can help.

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Why VSAM Tuning Still Matters

Whether your data environment is growing by leaps and bounds or you're implementing new technologies, chances are that you need more resources but don't have the budget to obtain them – or the time to handle them.

Effective VSAM tuning can help by:

- Freeing I/O, DASD, and CPU resources
- Improving productivity

Sounds great, right?

Here's the problem: because IT staff is being asked to do more with less, many installations do not have an expert in VSAM tuning on hand to handle these projects. In addition, advice about VSAM tuning can be contradictorily and inaccurate, since enhancements and updates to VSAM have made many of the old maxims obsolete.

The good news is, even if you don't have an in-house expert, you can still take advantage of the benefits of VSAM tuning. With the right VSAM performance tool, you can learn what's going on behind the scenes and implement best practices.

Visibility: The Foundation of Effective Tuning

"Now we know! And knowing is half the battle." – G.I. Joe.

To tune your batch and CICS KSDS files, you need insight into how they're behaving under the covers. Using only the information from LISTCAT reports, you're almost certain to make costly mistakes that actually reduce performance and only provide short-term DASD savings.

Mainstar's Catalog RecoveryPlus (CR+) MAP command lets you "see" inside any KSDS, while it's open and being processed in batch or CICS, to determine exactly how it's behaving and how you should tune it for optimum performance and the most efficient DASD utilization.

Best Practices with CR+ Map

With CR+ Map, you have a roadmap to the KSDS at your installation. The next step is determining the most efficient route to take to optimize your cost savings and performance.

Through working with diverse installations, Mainstar has developed a set of VSAM tuning best practices. By following these guidelines, you can start taking advantage of CR+ Map quickly.

- Differentiate good CI and CA splits from bad – particularly NIS versus SIS mode splits.
 - Virtually all SIS mode splits are wonderful, yet LISTCAT doesn't differentiate the two types in its reporting.
 - The MAP output reports let you see SIS mode splits, and most importantly, see just how good they really are.
- Establish an optimum reorg frequency, rather than an automatic daily or weekly cycle.
 - Reorg often actually hurts performance, by removing free space from CIs and CAs that have already split at the exact location where this dynamic free space is necessary. The effect is, VSAM has to re-split these exact areas again very soon after the reorg.
 - With MAP, you can see where the high activity areas are within the KSDS, so you can tell whether CI/CA splits are beneficial or harmful.
- Determine optimum DEFINE attributes.
 - Too often, KSDS files have definition attributes that are cloned using a standard DEFINE CLUSTER command. This perpetuates incorrect attributes, resulting in poor performance and inefficient DASD utilization.
- Identify data sets with the dreaded “dead CI” problem that wastes thousands of DASD cylinders without anyone even knowing it.
 - IBM has been working to resolve this problem for many years, but a resolution isn't available that solves it once and for all.
 - MAP identifies every location within a KSDS where this problem is occurring, letting you see exactly which part of your file's key is prone to the problem, and exactly how to correct for the problem.
 - In a one-hour analysis at a very large bank data center, we eliminated 90,000 cylinders (that's almost 30 3390-3 volumes!) through one keyword change that was recommended by MAP.
- Combine CR+ MAP with CR+ EXPLORE and REPORT to track down data sets with specific attributes quickly and easily, and automatically build MAP commands to analyze these files.

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Conclusion

With today's constraints on time and money, proper VSAM tuning is crucial. The right VSAM performance tool can provide you with the information and functionality you need. By following a few best practices, you can start freeing resources and improving productivity quickly.

With CR+ MAP, you'll never be lost again, whether you're tuning an application KSDS file or the BCS component of an ICF catalog. No other solution provides the type of information that MAP does.

To see for yourself just how valuable CR+ MAP can be for tuning your KSDS files, request a trial at www.mainstar.com or contact us at experts@mainstar.com to arrange a personal briefing.

Interested in learning more about VSAM performance and tuning? Here are some tips from Mainstar:

- [How to Achieve More Efficient VSAM Data Set Buffering](#)
- [Hitting the 4-GIG Limit – With No One Watching for It](#)
- [How to Remove a Dummy High-Key Record](#)

Elliot Hamilton

Elliot Hamilton has been involved with IBM's MVT, VS1, SVS, XA, and numerous variations of MVS since the mid-1970s. He gained VSAM and catalog expertise through experience as a systems Programmer and as a System Engineer and Instructor for Amdahl Corporation. As one of the early instructors for Mainstar Software Corporation (formerly Software Information Services, Inc.), Elliot presented VSAM and ICF catalog classes around the world. When Mainstar's customers' needs changed, Elliot worked with the Mainstar Software Development staff on numerous projects, including Catalog RecoveryPlus (CR+) and VSAM Manager. Currently, Elliot provides Level 3 Support for CR+, using his expertise in identifying tricky and difficult problems within ICF catalogs to search out brilliant CR+ solutions.

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010-0137-01 (09/12/06)

