

## RTD Sets New Standards in Disk-Space Management at Fiducia AG

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### Disk-Space Optimization in a Round-the-Clock Environment

The maintenance and optimization of disk-space occupancy are among the most important duties of storage managers in MVS computing centers. In many computing centers, a 30% annual growth rate in data volume or more has raised the installed disk-space far above terabyte limits. In this situation, RealTime Defrag (RTD) provides significant cost savings. Through innovative technologies, this tool sets new standards in disk-space maintenance.

In the past, in spite of its gargantuan disk pools, Fiducia AG again and again faced file allocation problems in its daily batch processing which primarily occurred in large-scale data sets. As a rule, two reasons were to blame. On the one hand, files were made too large and the allocated excess in disk space was not automatically released again. On the other hand, problem situations occurred when disks were fragmented so extensively that large contiguous space no longer existed. This frequently resulted in job terminations and annoyed employees while causing unnecessary expenses.

The tool we employed for disk space maintenance at that time was IBM Defrag. However, with IBM Defrag, while a disk is being examined, this disk is neither able to read any data sets nor can one write on it. As a result, processing came to a standstill. In principle, this massive limitation also applied to most of the other defragmentation tools on the market.

In order to gain better control of the resulting problems, numerous Rexx procedures were written with which defragmentation jobs for the disk pools could be scheduled on certain days and at certain times. Nevertheless, problems were frequently encountered, above all on critical processing days, such as during monthly and quarterly closings: Defragmentation jobs could no longer be run at these times, which in turn led to space problems. Therefore, Fiducia's storage management team was looking for a high-efficiency defragmentation tool with which these problems could be eliminated.

### Optimal Utilization of Disk Space Anytime

Since February of 1996, Fiducia AG has been using RealTime Defrag (RTD). With RTD, the pools are now being worked around the clock - even on critical processing days. At all times, RTD provides a guaranteed optimization of disk space through defragmentation, the freeing of unused disk space, and reduced extensions.

During operation, at freely definable intervals, RTD examines where and whether disk space occupancy can be optimized.

With its high-performance functions:

- Release (Returning of unused disk space to the system)
- Combine (Consolidation of extensions) and
- Defrag (Automatic merging of free space areas)

RTD executes the necessary actions automatically in *real time* and parallel to operating applications. Job terminations are prevented, and smooth processing is guaranteed.

RTD provides a substantially improved utilization of free space by automatically defragmenting the disks. It noticeably reduces costs through the flexible release of unused space in VSAM and Non-VSAM files and accelerates processing by combining separate data areas.

With RTD, all functions are easily set and controlled via a comfortable ISPF interface. Practical parameters and flexible masking options in definitions facilitate an accurate adjustment of each function's operating mode and of the resources to be maintained. For instance, parameters can be set separately for all functions. The use of RTD is particularly effective by directly cross-linking data set and volume specifications.

Parameter options that are profitably used at Fiducia AG include:

- exclusion of data sets that cannot be processed under any circumstances,
- exclusion of specified volumes,
- AGE Parameters if only files of a specified age are to be run,
- TIME parameters if the function is to run for a pool only at a specified time, and
- selection of files according to file format.

Parameter changes are optional at any time and can be activated immediately.

By means of the RTD simulation mode, optimal results for the active mode may be safely planned without the actions actually being executed. During processing, efficient I/O techniques guarantee optimal performance. Parallel-run applications are not impeded.

A log allows the tracing of any actions executed by RTD. Clearly laid-out online reports facilitate successful control at any time and show which improvements could be achieved on individual disks through the use of RTD.

## **Considerable Savings Potential**

In January of 1997, at Fiducia AG,

- 980 GB were subjected to the RTD defrag function (incl. batch, TSO),
- 870 GB were subjected to the release function (incl. batch, TSO development), and
- 780 GB were subjected to the combine function (incl. batch, TSO development and system engineering).

## **The Trend Is Still on the Rise**

During a four-week period, in all defined pools of the release function, approximately 340,000 cylinders (over 10%) were freed and approximately 100,000 extensions were processed with the combine function. The entire sequence went smoothly and safely and no problems were encountered during day-to-day processing. Along with RTD, we were also able to successfully employ hardware compression.

Due to the substantial savings in disk space, the procurement of additional volumes can be delayed. New investments will not be necessary until later.

Following the adaptation of the parameters during implementation, expenditures for further maintenance are minimal. If generic information is used, new disks are automatically included in the optimization process.

## **Round-the-Clock Optimization**

At Fiducia AG, RTD optimizes our 24-hour operations while guaranteeing simplicity in handling. RTD is a started task and runs year-round, 24 hours a day, seven days a week. Only in the event of a release changeover does the started task need to be stopped briefly.

The fact that the defined volumes are permanently reviewed and worked is one of RTD's critical advantages. In this manner, low fragmentation is guaranteed at any time. RTD provides optimal disk space occupancy around the clock.

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