

RTD RealTime Defrag at ZKB

The Environment

ZKB currently maintains a DASD configuration of about 27 TB spread across 2 data centers.

There are approximately 8,200 logical volumes (of which 18% are 3390 Model 9) initialized and distributed as follows:

- Data Center Hard 3,269 volumes (88% SMS-managed)
- Data Center Wipkingen 4,903 volumes (82% SMS-managed)

For the SMS-managed volumes we maintain about 45 Storage Groups per Sysplex.

Our pooling concept differentiates between IMS-, DB2-Databases and common data such as batch files, test data, etc.

PROSMS StopX37 and DFSMSHsm are active to maintain, backup and migrate data.

The Situation before Implementing RTD

Defragmentation of the volumes was performed with DFDSS.

With the ever-increasing growth of DASD space requirements and the associated number of volumes, it was no longer possible to run DFDSS on a daily basis. The maintenance window was too small. Primary Space allocation problems occurred more often, and STOPX37 invocations for allocation reductions increased dramatically.

Re-scheduling the defrag jobs to run on Sunday provided little relief. Within a few days, the volumes were again highly fragmented. Also, maintaining the defrag jobs became a larger and cumbersome task.

We had similar experiences with partial space release. We had used DFSMSHsm to perform this task. However, we could only use HSM on a very limited basis because the HSM processing windows were too small.

Installing RTD

After a Software Evaluation in 2002, we decided to purchase RTD in December 2002. The installation process for RTD was very easy and without any problems. After a short test-phase, we implemented RTD in the Development Data Center.

Initially we configured RTD to process the common Test Pools. Fragmentation in these pools improved from day to day. Partial space release and extent reduction were also implemented with successful results.



Operations Today with RTD

RTD is currently active on all Syplexes, and about 90% of all DASD are under RTD control

DEFRAG is active for all pools. *Partial Space Release* and *Extent Combine* are active on the batch and test pools (sequential files)

RTD Achievements

The definition of the RTD control parameters was very easy and user-friendly. Since the parameters are very flexible, a minimal amount of work is needed to define the entire configuration. The statistics feature allows one to easily audit the results which RTD achieves. Also, it would not be possible to run batch jobs to defragment so many volumes without disrupting data center operations.

As a result of implementing RTD –

- The daily HSM Auto-functions were relieved of the burden of performing Partial Space Release with the result that the HSM processing window was no longer overloaded.
- The number of ProSMS StopX37 invocations for primary and secondary extent reduction as well as volume-add operations were significantly reduced
- The Fragmentation Indexes for our volumes have become stable (between 100 and 300) which has resulted in improved performance.
- Space-related abends occur very seldom.

The amount of DASD space which we save using RTD is certainly an important factor which speaks for RTD. However, the savings of CPU resources as well as people resources achieved by implementing RTD versus running batch defrag jobs is the more important argument in favor of RTD.

Here are a few statistics on RTD activities for the month of October 2003:

- Partial Space Release per day: 1,250 MB
- Extent Reductions per day: 11,200 Extents
- Fragmentation Index Reductions per day: 14,750 Points

The Future

The following RTD activities are planned for 2004:

- Review RTD Parameterization
- Activate RTD for VSAM Files

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