



Land Registry

Established in 1862, Land Registry is responsible for maintaining a register of land ownership in England and Wales. With the largest transactional property database of its kind, Land Registry underpins the economy by safeguarding ownership of many billions of pounds worth of property and provides essential information and services to business customers and members of the public. It is also at the forefront of developing and implementing major technological improvements to conveyancing processes in England and Wales.

Managing data with RealTime Defrag (RTD/XP)

Prior to implementing RealTime Defrag in 2003, Land Registry had 20 Terabytes of OS390 data stored on 3,350 DASD volumes distributed across 4 storage subsystems (not including mirrored subsystems). At that time batch jobs were run during monthly maintenance windows, to defrag up to 100 key DASD volumes. On many of the remaining volumes that predominantly held DB2 data, fragmentation had not been a significant problem. Nevertheless, the data was growing rapidly and because only a relatively small proportion of the DASD volumes could be defragged each month, many datasets had multiple extents and fragmentation levels were generally high.

With the advent of more online systems and the general trend towards 365x24 availability, scheduling maintenance time was becoming increasingly difficult. It was recognised that should fragmentation become a problem it would be difficult to resolve without an unacceptably long outage. Ideally all DASD should be defragged regularly to maximise contiguous free space and minimise dataset extents.

The implementation of RTD/XP took place without incident during which the software proved straightforward to install and easy to configure. RTD runs as a started task, continuously managing the free space and datasets on each disk under its control. It spends a relatively short amount of time grooming each disk a little before moving on to the next. Due to the fact that the majority of Land Registry disks had never been defragged RTD was extremely active when first implemented, releasing over-allocated space, combining dataset extents and reducing disk fragmentation. The result was a steady improvement in the amount of contiguous free space and the fragmentation level on each volume. Once optimisation was achieved, the amount of activity required by RTD to maintain a low fragmentation level was significantly reduced, with little or no action necessary for many volumes.

Conclusion

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DASD storage has continued to grow and today Land Registry has over 48 Terabytes of z/OS data stored on almost 6000 volumes distributed across 2

storage subsystems (not including mirrored subsystems). The ongoing benefits of using RTD are: -

- There is no need to schedule downtime to perform defrags, because it is not necessary to stop applications and quiesce activity for RTD to run

- Thousands of volumes are continuously monitored and defragged as per the defined policies
- Over-allocated space is reclaimed as free space
- Free space is consolidated into larger contiguous areas
- The majority of datasets are consolidated into one or only a few extents

Through the use of RTD, Land Registry is able to maintain its high level of service while optimizing the use of its DASD storage system.



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