

Nominee: DataCore Software

Nomination title: Grundon Waste Management reclaims data control using DataCore's software-defined storage

Grundon Waste Management Ltd., are the UK's largest privately owned waste management and recycling company and have been using DataCore's SANsymphony software defined storage platform reliably for five years, highlighting longevity and flexibility along the way.

The driving force behind the implementation was to consolidate and manage data sets growing by 20% year on year by implementing a structured process and delivery plan for 7 major data centre sites including the primary data centre located in Benson, Oxfordshire and numerous regional branch operations across the UK.

- How did the solution address the challenges and were there any particularly innovative aspects that made it stand out?

Grundon ICT went back to the drawing board to implement a detailed data management strategy facilitated through software-defined storage to provide performance, durability and high availability. Working hand in hand with DataCore Gold Partner, Park Place (formerly NCE Group) the team worked from the ground up to create the layer of flexible storage to serve the virtualised estate.

With an environment of 48 physical servers and 16 physical vSphere ESX hosts running 22 virtual machines, Ross knew that his first process should be to create a stable, managed environment for data to reside within. Ross advocated this holistic approach in the knowledge that if the data storage was managed correctly, then Grundon would benefit from a more effective, scalable VMware environment from which to migrate and provision new virtual machines (VMs). To achieve this, Ross upgraded his environment to DataCore's SANsymphony software solution, running on HPE servers.

More Control and Powerful Automation: "We now have the required flexibility, stability, performance and manageability to assure us for years to come."

Once installed, DataCore's SANsymphony software quickly began to reap management rewards in real-time, offering a granular window and management capabilities across Grundon's entire storage estate of multiple Direct Attached Storage devices and arrays. DataCore's Auto-Tiering function used the inbuilt intelligent heat-mapping feature to provide a configured view of system behaviour and performance allocation of data. Using this mapping, SANsymphony then automatically and systematically began the process of tiering data according to real-time usage. The 'hottest' data identified was automatically tiered towards Grundon's fastest storage assets, (higher speed SAS arrays and towards Flash / SSD devices as they are introduced) with less-used data allocated to older and slower storage arrays, speeding performance for frequently accessed

data sets and applications and utilising the most cost-effective storage tier. Better diagnosis of disk behaviours also empowers Grundon to spot issues before they occur -any latency issues are diagnosed and highlighted far quicker than through manual monitoring. Using the diagnosis, ICT can quickly determine whether any slow-down is attributable to disk issues or application issues. The software highlights areas where IOPS are bottlenecked to allow ICT resolution before users notice a decline in application performance.

- **What major challenges were faced during the project and how were they overcome?**

At Grundon, operations and recycling occurs 7 days a week with little option for downtime, so assured availability of both supporting systems and data is constantly required. Grundon achieves this using SANsymphony in a separated dual mirrored configuration with automated failover and failback at the Benson facility, with the software platform shielding applications from any failures at the storage device layer. This helps with planned maintenance and migrations. ICT simply work on one half of the mirror with the other half automatically taking over without disrupting applications. When the affected mirror is re-instated, the mirrored pairs are automatically resynchronized, the original paths are restored, and the normal dual node redundancy is automatically reapplied without ICT intervention.

Again, as with any large industrial brand with heavy logistics and movement of materials, Grundon requires full Disaster Recovery. Full disaster recovery is offered at the Grundon Ewelme facility, some two miles away from Benson. Here, primary data is asynchronously replicated, so that in the event of a significant incident at Benson, Grundon have added assurance that the entire virtual estate can be resurrected within seconds.

- **What tangible benefits has the organisation seen as a result of the project's implementation?**

Other tangible benefits which carry real world £ savings from the solution include thin-provisioning, or in Ross' words, "absolutely allocating just the required exact amount of disk" which formed the second part of the Grundon install. Decreasing waste is a key to Grundon's core business. ICT were equally cognisant that up-front disk procurement based on assumptions about disk required had historically led to over-allocation. Deployment of thin-provisioning immediately alleviated this overhead. Instead, thin-provisioning created virtual volumes from Grundon's shared storage pool to dynamically allocate more disk space – as and when required. Given this automatic availability of disk, I/O intensive applications running at intensive workload times - such as Microsoft Exchange Server, Microsoft SQL Server and Microsoft Dynamics NAV enterprise resource planning software (running in one Grundon division) - are supplied with I/O sourced from pools of unused disk, previously lying idle. If the system requires greater capacity, SANsymphony notifies the administrator that it's time to add capacity.

Ross noted on the pooling and consolidation of storage resources, “Gaining control of our storage layer has had profound ramifications across the entire estate. It wasn’t until the SANsymphony platform was fully deployed that we appreciated the management fine-tuning capabilities.”

Why nominee should win

- 1. Consolidate and manage data sets growing by 20% year on year by implementing a structured process and delivery plan for 7 major data centre sites including the primary data centre located in Benson, Oxfordshire and numerous regional branch operations across the UK**
- 2. A holistic and enduring approach to an environment of 48 physical servers and 16 physical vSphere ESX hosts running 22 virtual machines**
- 3. Management of Grundon’s entire storage estate of multiple Direct Attached Storage devices and arrays using DataCore’s Auto-Tiering function with inbuilt intelligent heat-mapping feature to provide a configured view of system behaviour and performance allocation of data**
- 4. Decreasing waste is a key to Grundon’s core business as was up-front disk procurement based on assumptions that had historically led to over-allocation. Thin provisioning means disk is shared only when required from a pool.**
- 5. Disaster Recovery and Business Continuity – systems and data constantly required to support 7 day a week operations, across a heavy industrial environment**