Quorn Foods

Quorn Foods optimises SAP, ERP & other critical Tier 1 applications; achieves structured Auto Tiering & shores up the entire Virtualised Estate.

About Quorn Foods

With an increasingly popular range of meat alternative products available in all major supermarket chilled and frozen cabinets, Marlow Foods, better known as the owner of the Quorn brand, offers quality food products to the discerning, health conscious customer attracted by the lower fat, lower calorie and meat-free options. Marlow Foods employs 600 across three sites in Norfolk, North Yorkshire and Teesside.

www.quorn.co.uk

Fred Holmes is the head of IT responsible for implementing and maintaining a robust and scalable IT infrastructure that offers 99.999% reliability. When sold in 2011 from a large parent company, Quorn Foods' IT Department of five found themselves with the opportunity to remap the entire existing physical server infrastructure which was rapidly falling outside of warranty, to provide total reliability of storage, servers, desktops and resources.

Phase 1: Server side Virtualisation Progresses into Greenfield Site

They consulted their trusted IT partner and DataCore gold partner, Waterstons, to assist with the major infrastructure overhaul. A greenfield site for virtualisation, Fred and the assigned Waterstons project team provided the Marlow Foods board with some compelling arguments and calculations as to why virtualisation had to be the way forward to replace the ageing kit and provide dramatic consolidation and resource savings to boot. In March 2011, as working proof of concept, a standalone Dell R710 vSphere 4 host with local storage was installed to prove a Microsoft Remote Desktop Services (RDS) farm could support all applications for a carefully selected test user group, and to prove the benefits of server virtualization.

Two months later and armed with a successful proof of concept, the project team implemented full server side virtualisation with three additional R710 hosts, all Brocade Fibre Channel attached to a storage area network (SAN) to support the full VMware vSphere Enterprise feature set. In total 30 workloads were virtualised into the new environment to allow older physical servers to be retired. From the Desktop perspective, a new RDS farm replaced 400 traditional desktops with thin client capabilities. DataCore's SANsymphony-V solution provided the essential cost-effective centralised storage running across two Dell T710 commodity servers. DataCore's storage hypervisor provided one general purpose synchronously mirrored SAN pool of 7TB usable (across a total of 48 10k SAS spindles in MD1220 SAS-attached storage shelves) to provide 99.999% reliability. The project team knew that the success of any robust, responsive VMware environment hinges on the abilities and performance of the storage infrastructure that sits beneath. This was especially true in Quorn's highly virtualised infrastructure with users interacting directly with virtual RDS Session Hosts.

> "*Like all things in IT, dramatic improvements to the infrastructure remain invisible to the user who only notices when things go wrong. But in this instance, no one could fail to notice the dramatic leaps in performance that was now afforded. That was the second stage of our plan completed.*"
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> *- Fred Holmes, Head of IT Quorn Foods*

Fred takes up the story. "Whichever way you classify the project, this was a major systems overhaul that we were embarking on. At the same time we also re-engineered a whole new domain so that we had a completely clean infrastructure. The DataCore part of the jigsaw enabled smooth migration within a two-week period and dramatically increased IOPS, even with the high burden that virtual servers place when they are delivering thin client capabilities". From a business user perception, the virtualised estate provided them with a turbocharged world.... and that was only the first part of the plan delivered!

Phase II – taking Business Critical ERP into the Virtual World and using DataCore to reduce data mining times from 20 minutes to 20 seconds

Phase II covered virtualisation of SAP Enterprise Resource Planning for financial, HR, accounts and sales platforms. With around 8,500 outlets that stock the Quorn brand across the UK alone, Marlow Foods have an extremely high dependency on their SAP ERP servers to drive critical business advantages across all departments. The challenge was to integrate the current SAP physical servers into the virtualised environment, whilst maintaining their 99.999% reliability and not affecting existing virtual machines reliant on the SAN.

To address this challenge, the project team added another R710 host to the cluster, and a further 4TB of usable synchronously mirrored storage within a new storage pool dedicated entirely to SAP (across a further 48 10k SAS spindles) and began the process to rebuild their SAP servers into the virtual infrastructure. This meant transitioning huge databases from the old physical environment. Proof would come at the end of the month, when database queries were traditionally the highest.

Fred continues. "We had an intensive challenge on our hands. The challenges of transitioning business critical applications from segregated physical servers into fewer consolidated virtual machines are widely documented as causing unmet performance expectations with slow running systems and erratic response times. The SAP ERP system literally forms the backbone of decision-making here, so it's a critical resource to protect and optimise."

In fact, in their new virtualised environment, Fred is pleased to report that even within the peak demand times at the end of each month, the data mining results from the databases have resulted in queries being returned within 20 seconds, compared to 20 minutes in the previous physical environment. This is in no small part down to the way that DataCore's SANsymphony-V leverages disk

About DataCore Software

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resources, assigning I/O tasks to very fast server RAM and CPU to accelerate throughput and to speed up response when reading and writing to disk. And with the wholly mirrored configuration, continuous availability is afforded.

"Like all things in IT, dramatic improvements to the infrastructure remain invisible to the user who only notices when things go wrong. But in this instance, no one could fail to notice the dramatic leaps in performance that was now afforded. That was the second stage of our plan completed" Fred notes.

Phase III: Enhancing the Virtualised Estate with Auto-Tiering

With everything properly virtualised, Fred and the team gave themselves six months to reflect on the new infrastructure before suggesting additional enhancements. What Fred suspected was that although he was thrilled with availability and performance, he could also achieve greater intelligence from the SAN itself than was currently offered. Simon Birbeck, Waterstons, one of the U.K.'s only DataCore Master Certified Installation Engineers, designed a performance enhancing model to automatically migrate data blocks to the most appropriate class of storage within the Marlow estate. Thinly provisioned SAN capacity was at around 80% utilization, but for 2013 planning Fred and the Waterstons team had allocated a 20% year-on-year growth, thereby potentially stretching utilisation to the maximum by the end of the year. Simon recommended switching to a three tier SAN design to facilitate the best cascading practices of Information Lifecycle Management (ILM).

A red top tier comprised a new layer of SSD flash storage, designed to be always full and utilized by the most frequently read blocks for extremely fast response. A pre-existing amber mid-tier caters for the average use data blocks served by commodity 10k SAS drives. Sitting beneath is a blue tier as the 'catch all' layer for the least frequently accessed data, maintained on low cost, high capacity 7.2k SAS spindles.

Fred summarises, "What Waterstons recommended was an intelligent usable form of ILM with DataCore's SANsymphony-V at the front-end making the intelligent decision as to which blocks should be allocated where."

Indeed SANsymphony-V has provided both strong reporting and accurate planning for data growth. Built-in diagnostics help to pro-actively identify when a problem is manifesting, changing the management role from reactive to proactive/intelligent. For the future, Marlow Foods will look to expand on the high availability/ business continuity environment afforded by SANsymphony-V by adding a further asynchronous replica at another site to further protect the SAP ERP environment. The scalability of SANsymphony-V brings a new level of comfort not possible with other forms of storage.

Fred takes the final words: "DataCore's SANsymphony-V now reliably underpins the entire estate. From a transformation perspective we have new levels of availability and enhanced decision making for both IT and the users."

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