Sun Achieves >80% reduction in space, power and cooling costs by Consolidating European Datacenters

A singular vision—"The Network Is The Computer"—guides **Sun Microsystems (www.sun.com)** in the development of technologies that power the world's most important markets. Sun's philosophy of sharing innovation and building communities is at the forefront of the next wave of computing: the Participation Age.

Highlights

Business Issues:

- Consolidate multiple European datacenters into single U.K. facility
- Compress equipment to reduce costs and maximize space
- Achieve consolidation and space compression without migrating applications to new operating system versions
- Reduce electric power and cooling requirements
- Improve storage management and utilization through virtualization

Solution:

- Sun used its own technology to consolidate equipment from multiple European datacenters into a state-of-the-art U.K. facility that reduces space, power and cooling costs by >80%.

Business Results:

- 80% reduction in server and storage space footprint
- 100 servers compressed to 80
- Enhanced storage utilization and management
- Improved performance and availability

Products/Services/Solutions:

- Sun Fire v240 server
- Sun Fire v440 server
- Sun Fire v490 server
- Sun StorageTek 9985 system

Success at a Glance

In November of 2005, Sun's IT Operations (ITOPS) group faced lease expirations that drove the consolidation of multiple European datacenters into a single state-of-the-art facility in their Guillemont Park, U.K campus. This consolidation was in support of their strategy to reduce their mission critical datacenter real estate by utilizing Sun's own technology. The consolidation needed to be completed quickly and achieve reductions in space and electric power consumption without the migration of large numbers of applications to new operating system versions. Fortunately, Sun's server technology and expertise in datacenter design and operations, and services like custom Consolidation Architecture and Design Services, allowed the consolidation to be completed in less than a year, with no down time, while producing reductions in space and utility costs far more dramatic than originally planned.

Sun needed to consolidate equipment from partner-managed datacenters in Amersfoort and Leeuwarden, Netherlands as well as datacenters formerly operated in Europe by two acquired companies: SeeBeyond and StorageTek. The original plan was to consolidate this into 3,000 square feet of datacenter space in Guillemont Park. On further analysis, however, Sun's Global Lab & Datacenter Design Services (GDS) organization saw the opportunity to compress the equipment into one 450 square-feet of high-density pod based on N+1 availability.

To accomplish the consolidation, Sun moved applications off 100 older Sun servers (Sun E4500, E6500 and others) with larger power and space footprints to 80 Sun Fire v240, v440 and v490 servers. Since time was of the essence, Sun chose not to move many of the applications to newer operating system versions and continued to run a mix of the Solaris 8, 9 and 10 Operating Systems. Now that the consolidation has been completed, Sun can gradually migrate all of the applications to the Solaris 10 Operating System and take advantage of Solaris 10 Containers and other advanced technologies to achieve even greater compute density and hardware utilization.

As part of the consolidation, Sun also replaced its network-attached storage , which consisted of an assortment of older Sun StorageTek disk arrays (Sun StorageTek A500, D1000 and others), to a storage-area network (SAN) based on a Sun StorageTek 9985 system. The new SAN allows for improved storage management, throughput and utilization through storage virtualization.

The high-density Guillemont datacenter is based on the "pod" concept. Each pod is a self-contained group of racks and/or benches that optimize power, cooling and cabling efficiencies. A combination of raised

"I am delighted with the high density achieved using the scalable, efficient pod design concept in our new datacenter"

—Jerry Hunter,
Senior Vice President, Sun IT Operations

floor and Liebert XDO overhead cooling units were used to deliver spot cooling for these high density locations. American Power Conversion Corporation NetShelter wide racks were used to provide intelligent metering & monitoring of power and cooling, ease access for cabling between the pods without impeding airflow.

The consolidation achieved even better results than originally planned. The higher server replacement ratio provided Sun with >80% reduction in space, power and cooling costs. The high-density, scalable datacenter design enables expansion up to five times todays capacity, with only 15% of the original datacenter space requested. Sun ITOps can now continue to execute their refresh activities to consolidate even more energy-efficient Sun server systems in to Guillemont Park.

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