Ordnance Survey

Mapping a Route to Open, High Performance Data Protection

Ordnance Survey has mapped out a next-generation information storage strategy with Symantec Corporation. Great Britain's national mapping agency is using Symantec™ technology solutions to ensure its digital data and mapping solutions are continually available across its business, Government, leisure, administrative, and educational customers—all within a highly efficient, scalable environment. Scaling seamlessly to cope with Ordnance Survey's insatiable appetite for digitized mapping data, Veritas NetBackup™ and Veritas Storage Foundation™ minimize server and application downtime and help reduce the price per megabyte of tape by a factor of seven.

ORGANIZATION PROFILE

Ordnance Survey is at the forefront of the digital revolution, producing computer data products and paper maps for business, leisure, administrative, and educational use.

INDUSTRY

Business Services

SOLUTION

Backup & Recovery
Data Center Automation
Disaster Recovery
High Availability
Storage Management

Digital Mapping and Intelligent Geographic Information

Two revolutions link Ordnance Survey. The first engulfed France during the late eighteenth century, with Britain fearing invasion as a result. In order to plan adequate defenses, the Government instructed its Board of Ordnance—the defense ministry of its day—to speed the necessary survey work. That historic decision led to the mapping of the whole country in detail, and is also the source of 'Ordnance Survey'. Today, Ordnance Survey is at the heart of another revolution: a technology one this time, with digital mapping and intelligent geographic information transforming business and public services.

Ordnance Survey is a dynamic, self-financing $200-million-a-year civilian organization at the forefront of the digital revolution, producing computer data products and paper maps for business, leisure, administrative, and educational use. It is still part of the UK Government, but it covers its operating costs by selling its products and services or licensing others to use its copyright material.

Countless business decisions, strategies, and public services are underpinned by accurate, reliable, locational Ordnance Survey information. The emergency services use it to locate incidents, local authorities use it to plan and execute regional programs, marketing companies use it for address referencing, and the data is sold to third-parties such as satellite navigation systems and interactive business location services. An outage for any one of these diverse customers would have a critical impact on their ability to operate—and would fundamentally damage Ordnance Survey's own relationship with these lucrative customers. For these reasons, uninterrupted information availability is of paramount importance.

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Mark Hunt
Systems Administrator
Ordnance Survey

Veritas NetBackup™ software minimizes cost and complexity through a unified data protection solution across the enterprise.

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Ordnance Survey also demands a seamlessly scalable storage environment. It has hundreds of surveyors in the field working to extend the breadth and depth of Ordnance Survey's mapping solutions—and as a result the demand for storage is growing fast. In the last three years, storage capacity has risen from approximately 60 terabytes to 600 terabytes—and the pace of growth shows no signs of slowing down. The enterprise environment supporting the data spans more than 120 Sun Solaris, HP-UX, and Redhat Linux servers, connected by Fibre Channel and SCSI, which is backed up to three libraries with 24 LTO drives. An Oracle RAC is also deployed for high availability, fail-over clustering.

Online, Easy to Control, and Cost-Effective to Manage

Veritas NetBackup software and Veritas Storage Foundation software—both from Symantec—play a crucial role in ensuring the broad-based, mixed environment upon which Ordnance Survey's mapping services exist is online, easy to control, and cost-effective to manage. NetBackup software provides complete data protection for Ordnance Survey's most critical enterprise environment information. As Mark Hunt, systems administrator explains, it helps the organization manage all aspects associated with backup and recovery, and has led to a standardization of policies across the business.

"Our most critical systems are the digital data mapping services (DDMS), within which we store more than 600,000 tiles of map data, where one tile represents an area of one square kilometer. We use NetBackup to conduct incremental backups of all systems including DDMS every day and full weekly backups. The centralized, policy-based backup allows our administrators to manage a greater number of servers from a single source, and automate many business processes."

Data Domain disk-based backup technology has been seamlessly integrated with NetBackup. This provides high-speed backup and recovery to the intelligent disk device, disk sharing and virtualization, together with the duplication of backup images from disk devices to tape for long-term archiving. Alongside this, disk staging is being used to leverage disk as a cache for an average of 10 days before storing the backup data on tape.

Optimizes Resources Allocation

Besides acting as a gateway to efficient high availability, the NetBackup software is also helping to optimize resources allocation, says Hunt. "We are benefiting from greater density on the tapes," he says. "Previously, when the backup was complete, the tapes would be taken off-site, irrespective of whether they were full or not. Now, using NetBackup, the tapes are almost always full. We estimate that the price per megabyte of a full LTO tape is up to seven times less than the previous DLT tape."

This improved efficiency is complemented by enhanced control. Ordnance Survey has been using Veritas Storage Foundation software for several years in its Solaris environment, and it is being used to optimize systems performance, availability, and manageability. "With Storage Foundation we can apply policies to configure and share storage without worrying about the limitations of the disk storage. We can also virtualize storage devices and manage them as local pools of storage," says Hunt. "It also provides us with a quick, powerful recovery journaling file system."

"We are exceptionally pleased with the NetBackup environment and if we had to choose it again we would. I've used Legato, Tivoli and others in the past and none of these can match NetBackup for reliability, ease-of-use, and functionality. Based on the highly successful Symantec storage roadmap, Ordnance Survey has developed so far, we will continue to choose them as our storage management provider."

SOLUTION AT A GLANCE

Business Drivers

- Reduce cost of storage
- Ensure mapping services are available to end users around the clock

Technology Challenges

- Ensure high availability for critical applications
- Improve resource utilization
- Overcome labor-intensive backup administration processes

Solution

Fast, secure and effective backup and restore in a critical, mixed environment

Symantec Products

- Veritas NetBackup™
- Veritas Storage Foundation™

Technology Environment

- Servers: 120 Sun® Solaris® (E250 up to F6800), 43 HP® HP-UX®, 100 Compaq & Dell, 35 LINUX servers in various RAC clusters
- Operating systems: Solaris, Tru64, Red Hat Linux ES4 & ES3
- Disk storage: 700TB SATA and 20TB Fibre Channel
- Tape storage: 12 x SCSI LTO, 12 x Fibre LTO. Up to 4,300 LTO1 tapes and circa 5,000 DLT tapes. DataDomain DD560 set up as a storage unit, 7 disk staging storage units.

Symantec Services

- Essential Support

BUSINESS VALUE AND TECHNICAL BENEFITS

- Minimized server and application downtime
- Reduced price per megabyte of tape by a factor of seven
- Streamlines management of one of the world's largest Oracle geospatial databases
- Delivered seamless scalability
- Optimized resource allocation
- Provided full backup and restore capability across multiple operating systems