



Reduce Complexity

Improve Flexibility

Service Catalogue

Enable Automation

## TOTAL UK builds a dual-site storage area network based on IBM System Storage technologies.

### Challenge

Provide stable, robust, high-performance data storage infrastructure capable of scaling to meet rising demand for file storage; provide enterprise-class data replication and backup capabilities to protect against disaster.

### Solution

TOTAL UK Lindsey Oil Refinery worked with Tectrade, an IBM Premier Business Partner, to build a dual-site storage area network based on IBM System Storage technologies.

### Benefits

Eliminated single points of failure in file server infrastructure, creating a more resilient storage resource; gained improved performance and flexibility in file serving; focused investment in storage capacity on a single, highly scalable platform, eliminating need to continually buy new servers; significantly improved protection against disaster, while removing much of the management overhead for storage.

**TOTAL UK Lindsey Oil Refinery chose Tectrade to architect and implement a new dual-site storage area network, replacing a relatively unstructured set of file servers. In addition to providing greater resiliency for business-critical data, with the ability to failover to a backup site, the Tectrade solution offers higher performance and flexibility, with reduced management overhead.**

With 95,000 employees and operations in more than 130 countries, the TOTAL Group is the world's fourth-largest publicly traded integrated oil and gas company. The TOTAL UK Lindsey Oil Refinery (TLOR) in North Lincolnshire is Britain's third largest, employing 500 people and capable of processing more than 200,000 barrels per day across 35 different product specifications.

With data volumes growing rapidly, TLOR was experiencing a steep rise in the management overhead for its Windows server landscape. The company site had numerous file servers, each with different backup solutions, yet there was little redundancy and no true disaster recovery option. In the wake of the Buncefield disaster TLOR recognised the need to create a more robust, scalable and disaster-resistant data storage infrastructure.

#### Infrastructure Objectives

##### Storage Consolidation

- Centralised Storage
- Mid-Range Disk
- Replication

##### Information Management

- File Virtualisation

##### Server Consolidation

- Fileserver Consolidation

#### Key Deliverables

- Improved workload balancing for file serving
- Increased performance, reliability and availability
- Improved business continuity with second site
- Improved flexibility and scalability

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*Fred Marsden, ICT Section*

Fred Marsden, ICT Section, comments: "It was difficult and time-consuming to manage our growing stores of data – and expanding the existing infrastructure was costly. There was also significant risk that we could lose valuable data in the event of a disaster. For both these reasons, we wanted to consolidate our storage to an enterprise-class storage area network."

## Selecting the partner

"Our business needs to store a vast – and growing – set of documents," comments Fred Marsden. "The existing infrastructure offered minimal flexibility or scalability, and we were continually buying and installing new file servers – representing both a capital cost and a significant ongoing operational cost."

To simplify file management, increase flexibility and scalability, and improve protection against data loss, TLOR engaged Tectrade to design and implement a dual-site SAN solution. Says Fred Marsden, "We had previously selected Tectrade to install a backup system utilising IBM Tivoli Storage Manager. Based on the quality of work delivered during that engagement, we had no hesitation in selecting Tectrade to build the new SAN fabric."

## Fully redundant storage architecture

The new solution is based on a fully redundant dual-site architecture; each site contains an IBM System Storage DS4300 with 4.2TB of disk as the primary SAN disk storage system. For tape storage, each site also has an IBM System Storage TS3310 tape library with four LTO3 tape drives offering 4Gbps Fibre Channel connectivity. Two IBM System Storage SAN16B-2 switches in each site provide fully redundant SAN connectivity. Both sites also include an IBM System Storage N5200 Gateway, providing a simple way for client platforms to use the storage resources on the SAN. The N5200 Gateways use Brocade StorageX software to provide a single name space for files, and are clustered to protect against partial or total loss of fabric connectivity.

"The Tectrade and IBM solution provides mirrored volumes of business-critical data in both the main and the remote site, with full backup to tape in both locations," says Fred Marsden. "If we have a problem in the primary site, failover occurs automatically with no disruption to user services."

He adds, "Tectrade provided a comprehensive service, from design through to the installation, implementation and configuration of the IBM equipment. The consultants from Tectrade are highly professional and clearly have a deep understanding of SAN technology – and this was reflected in the quality of training they provided to my team."

## Guaranteeing business resilience

By consolidating its existing file servers to the IBM DS4300, TLOR has increased the performance, reliability and availability of business-critical data. The Tectrade solution provides full, automated backup via IBM Tivoli Storage Manager to enterprise-class LTO3 tapes, and the adoption of a mirrored dual-site architecture means that TLOR can continue normal operations even in the event of a complete shut-down at its primary site. The equipment in the new storage environment will scale significantly, enabling TLOR to absorb the rapid growth in data volumes without requiring major new investments and without adding any management overhead.

"Rather than having our file serving capacity split piecemeal over a growing number of servers – each of which was a potential single point of failure – we now have a single, high-performance storage resource in the primary site, mirrored to an identical device in a remote location," says Fred Marsden. "We can make much more efficient usage of our total disk capacity, which will mean that we will upgrade less frequently in the future, lowering the potential cost."

He concludes, "Working with Tectrade on the new SAN solution has given us a robust, highly flexible storage environment that can support our growing operations, and that offers low total cost of ownership."

## Vendor Alliances on this project

Brocade  
IBM  
NetApp

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