



Wellcome Trust Sanger Institute  
Cambridge, England  
www.sanger.ac.uk

#### Industry:

Life Sciences

#### Employees:

850

#### Oracle Products & Services:

Oracle Database  
Oracle Partitioning  
Oracle Real Application Clusters

**“Oracle’s SecureFiles storage feature makes the Oracle Database 11g a major platform for managing large object data types while guaranteeing rapid retrieval speeds, improved system performance, optimized space and hardware usage, and infinite scalability.”** – Karen Ambrose, Senior Database Administrator, Wellcome Trust Sanger Institute

## Wellcome Trust Sanger Institute Manages Terabyte Data Growth Each Week While Driving Down Costs

Leading global genome research institute Wellcome Trust Sanger Institute (WTSI) uses large-scale sequencing, informatics, and analysis of genetic variation to further the understanding of genes in health and disease. Responsible for the completion of one-third of the human genome, WTSI is driving the 1000 Genomes Project, an international research consortium formed to create the most detailed picture of human genetic variation available to date.

### Challenges

- Ensure continued rapid accessibility to 650 researchers and the worldwide scientific community of 74 terabytes of large object (LOB) sequencing data in the WTSI’s short read archive, while handling data growth of 4 terabytes to 10 terabytes weekly
- Cut hardware and system maintenance costs

### Solution

- Implemented Oracle Database 11g to benefit from SecureFiles, a re-engineered storage concept that enables large unstructured files to reside and be managed in the database
- Used SecureFiles to consolidate structured and unstructured LOB data, such as complex sequenced data previously held in separate file server-based archiving systems, on Oracle Database 11g
- Leveraged SecureFiles to deliver file system-like performance for LOBs with optimized algorithms that deliver 10 times faster retrieval, read, and write speeds than with Oracle Database 10g
- Maintain data integrity and control access to the data
- Optimized advanced space management and leveraged smaller footprint enabled by SecureFiles to reduce support costs
- Streamlined system management and increased availability by using Oracle Partitioning in Oracle Database 11g to divide large tables into smaller, manageable units
- Leveraged Oracle Real Application Clusters to guarantee data availability through seamless load sharing and instant failover
- Cut costs by gaining the ability to use commodity hardware with cheaper storage devices and simplify the backup system
- Gained the ability to accommodate exponential data growth