

King's College London Uses IBM BNT RackSwitch for HPC

*IBM BNT RackSwitch solution enables leading edge
medical research and analysis*

Overview

The need

Medical researchers at the National Institute for Health Research and King's College London needed high performance computing capabilities to more quickly analyze, store and archive vast quantities of data.

The solution

IBM® System x® iDataPlex® combined with IBM BNT® RackSwitch G8124 10 Gigabit Ethernet switches helped reduce the time necessary to analyze data; thus reducing the time needed for analysis from days to hours.

The benefit

This IBM HPC system provides higher computing power, energy efficiency, a high-performance storage system and a 20-fold reduction in analysis time.

The High Performance Computing (HPC) system, running an IBM System x iDataPlex system equipped with IBM BNT RackSwitch G8124 10 Gigabit Ethernet switches, enables researchers to more quickly analyze, store and archive the vast quantities of data generated during their search to understand the role of genetics in a range of common health issues, such as the development of cancer. "The sequence of the human genome has been known for ten years now so we are using new sequencing technologies to sequence specific regions of the genome in large numbers of people in order to help understand the contributory factors to a variety of common complex disorders and developmental defects," says Dr. Rebecca Oakey, Reader in Epigenetics, Department of Medical & Molecular Genetics, School of Medicine, King's College London.

The two sequencing machines in use in the King's College London and NIHR Biomedical Research Centre's genomics facility collectively generate up to 50 billion base pairs of usable DNA sequence data



Solution components:

Hardware

- IBM® System x® iDataPlex®
- IBM BNT® RackSwitch G8124 10 Gb Ethernet switches
- IBM System Storage® TS3310 Tape Library

Software

- IBM Tivoli® Storage Manager
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every 10 days. The HPC system can reduce the time necessary to analyze this data 20-fold or more, reducing the time for analysis from days to hours.

The HPC System design at King's college includes:

- IBM System x iDataPlex server hardware that meets the Biomedical Research Centre's requirements for high performance, low power consumption, and low weight
- Ultra-low latency, 10 Gb Ethernet switches from IBM System Networking. These IBM BNT RackSwitch G8124 switches enable high-speed, highly efficient and low-cost networking for the HPC environment, while being very energy efficient
- Panasas ActiveStor Series 8 clustered storage using its built-in Panasas 2 ActiveScale distributed parallel file
- Current storage of up to 180 TB of raw data and scalable for future use
- An IBM System Storage® TS3310 Tape Library unit with Tivoli® Storage Manager to provide long term, security-rich, off-site data back-up

About IBM BNT RackSwitch

IBM BNT RackSwitch top-of-rack 1 and 10 Gigabit Ethernet switches reduces the total cost of data center ownership and cloud computing infrastructure ownership, overcomes network overload, and enables scale-out data center economies. Using RackSwitch, data center and

cloud computing architects can standardize on a unified and affordable rack-level network infrastructure to provision and scale out Web 2.0 environments, high-performance cloud clusters and virtualized data centers. The IBM BNT RackSwitch product family incorporates innovative VMready™ software to extend virtualization by mirroring the benefits of server virtualization within the network at the rack level. This feature saves energy through rack-friendly cooling and alleviates management pains by removing complexity through simplified management and fabric convergence.

For more information

Contact your IBM sales representative, IBM Business Partner or visit us at:

- ibm.com/systems/x/hardware/idadaplex/
- ibm.com/systems/networking/switches/rack.html

For more information about King's College visit: <http://www.kcl.ac.uk>

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