DDN® STORAGE

SUCCESS STORY

ICR The Institute of Cancer Research

USE CASE:
Analytics, Clinical Research

INDUSTRY:
Life Sciences

> *DDN's innovative design for storage tiering was the winning combination because it gave us the most flexibility to adapt to changing research needs.*

Dr. Jon Lockley
Head of Scientific Computing, The Institute of Cancer Research, London

USAGE APPLICATIONS

- VDI using VMware HorizonView
- NFS – ESXi Data Store
- Boot Disk for iSCSI – ESXi and Windows servers

With 140 research teams focused on driving the future of dynamic adaptive therapies, ICR must be diligent in adapting support services. "We are taking storage flexibility to the next level," Dr. Jon Lockley, Head of Scientific Computing.

 THE INSTITUTE OF CANCER RESEARCH, LONDON, IS ONE OF THE WORLD'S MOST INFLUENTIAL CANCER research organizations, with an outstanding record of achievement dating back more than 100 years. The Institute of Cancer Research (ICR) is led by Chief Executive, Professor Paul Workman — an expert in cancer drug discovery. It is a world leader in identifying cancer genes, discovering cancer drugs and developing precision radiotherapy. Together with hospital partner, The Royal Marsden NHS Foundation Trust, the pair is rated in the top four centers for cancer research and treatment worldwide.

The Challenge

A single, central storage infrastructure that would enable users to collect and analyze all types of active research data.

According to Dr. Jon Lockley, Head of Scientific Computing at the ICR, meeting the data needs of scientists and clinicians creates unique requirements. "We have to support a variety of data workflows and delivery needs," he says. "Scientists pull data directly from research instruments and immerse themselves in the technology, whereas clinicians want fast results from diagnostic tests and treatments."

The research data service (RDS) had to be broad enough to support eight research divisions and all types of biology, chemistry and physics-related data. It needed to be able to pull in massive amounts of data from different scientific instruments and next-generation sequencers while connecting to various research services from laptops and desktops of every flavor, to high performance supercomputers with CPUs and GPUs.

Why They Chose DDN

- ICR set out to deploy a scalable solution that would host a wide range of scientific and clinical data. "It was not just a large data store that we sought," Professor Paul Jeffreys, Digital Operations Program Lead for ICR, notes. "we were looking for a trusted partner who would provide an evolving solution that could grow over time and keep pace with our requirements.";

- The inherent agility of DDN's proposed solution to expand quickly and transparently;

- The infrastructure is extremely resilient with replication and erasure coding across three geographically separate locations, snapshots.

2PB of usable storage in DDN's GS7K® as a stretched cluster with synchronous mirroring between sites. Additionally, 4PB of WOS object storage was installed to provide a tier that is protected using Global ObjectAssure® (GOA) advanced erasure coding. The sites are connected with private 10Gbps network links, with an option to increase bandwidth as needed.

The Solution
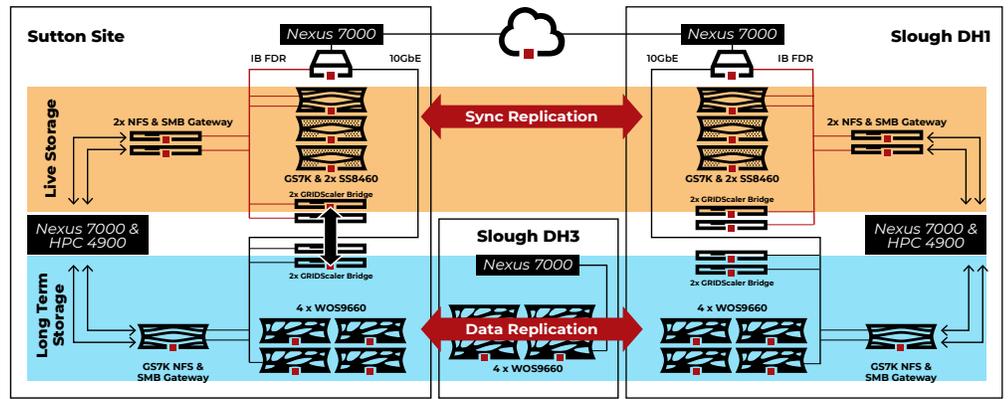
The Benefits

Collected data is easily accessible for analysis and big data modeling.

The new RDS service is designed to be scalable, cost-effective, and highly resilient – an infrastructure scalable both in front-end performance and back-end capacity that can easily increase to meet changing demand. The solution provides a resilient fast access tier for tough workloads, with a transparently integrated object tier that delivers a simple single namespace and provides multi-site data protection for longer term data storage. Not only can the ICR give users confidence that research data is easily accessible regardless of storage tier, it's well placed to keep pace with evolving scientific and clinical requirements. In the future, researchers will be able to manage their data from inception, through to long term storage.

Future Challenges

Increased use of machine learning and artificial intelligence is expected to impact storage growth.

"As the ICR evolves its research capabilities, we expect to see a change in the balance of our storage demands," muses Lockley. The RDS service will underpin Data Science activities in the ICR, in particular its Knowledge Hub. It will underpin ICR's evolution towards precision and adaptive healthcare. "By 2022, we'll be undertaking novel dynamic, adaptive individualized patient trials.", Jeffreys concludes.

Please note: The views expressed in this article are those of the individuals concerned and do not necessarily reflect the position of the ICR.

ABOUT DDN®

DataDirect Networks (DDN) is the world's leading big data storage supplier to data-intensive, global organizations. DDN has designed, developed, deployed, and optimized systems, software, and solutions that enable enterprises, service providers, research facilities, and government agencies to generate more value and to accelerate time to insight from their data and information, on premise and in the cloud. For more information, visit our website www.ddn.com or call 1-800-837-2298.

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