The UK National Grid Service Node at the University of Leeds

Figure 1: Inside the Leeds NGS node

NGS Mission

The National Grid Service (NGS) aims to provide coherent electronic access for UK researchers to all computational and data based resources and facilities required to carry out their research, independent of resource or researcher location.

It forms the foundation of the UK e-Infrastructure, which underpins a broad portfolio of e-Research projects. Furthermore, it plays an instrumental role in ensuring UK leadership internationally.

NGS Resources

Today the NGS [1] offers significant heterogeneous computational and data resources for researchers applying advance innovative methodologies and techniques. At the core of this free service for UK academia there are four nodes. These are hosted, operated and supported by the White Rose Grid (WRG) [2] at the University of Leeds, STFC, and the Universities of Oxford and Manchester. In addition to the core nodes services, NGS users may use its partners' resources. These are offered by the UK national high performance computing HPCx service, and the universities of Cardiff, Glasgow, Lancaster, Westminster and Belfast. The NGS collaborates closely with its affiliate sites, including the Edinburgh Compute and Data Facility, Imperial College London, Keele University, University of Bristol; University of Oxford Particle Physics Department, University of Reading, University of Southampton and RAL SCARF. Both partners and affiliates run NGS compatible software, and integrate monitoring and support arrangements with the NGS.

Furthermore, the NGS is now working with a number of institutions which are in the process of joining the UK National Grid Service and are to be partners or affiliates in this UK collaborative e-Infrastructure offering the production grid service.

Access to NGS

NGS facilities are freely available to UK academic researchers. Registration is available through a web interface [3].

Projects and users requesting a large amount of NGS resources are approved through a light-weight peer-review process.

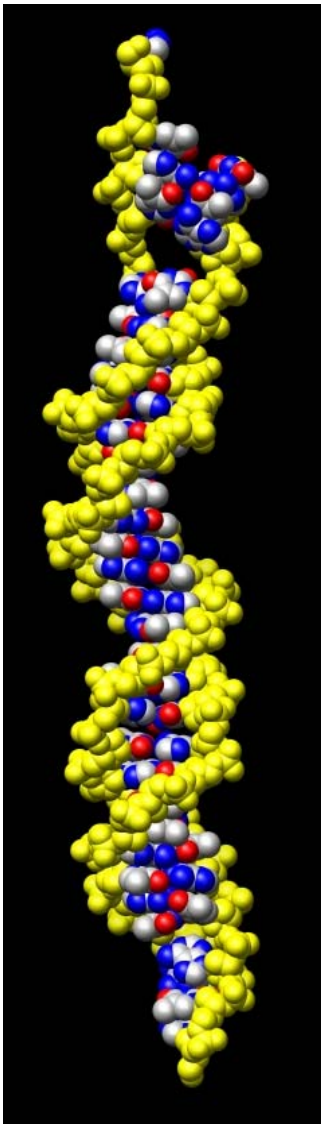

Figure 2: A screenshot of a stretched DNA sequence; the double strands start to separate due to the applied tension.

Users need to obtain and use a digital certificate (X509) to access NGS resources [4].

NGS Use

A broad portfolio of e-Research projects are computed on the NGS. For example, Dr Sarah Harris at the University of Leeds uses the NGS to conduct computational research into the mechanical properties of duplex DNA. She has developed computer simulation methods to mimic nanomanipulation experiments, which stretch single molecules in the laboratory (refer to Figure 2).

Training

The training team from the National e-Science Centre (NeSC) offers courses on NGS use as well as on other aspects of effective use of e-Science technologies and e-Infrastructure in many fields of research [5].

More about NGS

The NGS web site [1] contains comprehensive information about this service. It also includes a number of *Case Studies* describing a broad portfolio of research projects carried out on the NGS.

The NGS resources and services enable researchers to take full advantage of grid technologies to enhance national and international e-Research and collaborations.

With a large number of users and a large number of diverse e-Research projects as well as with the growing number of partners providing further resources, the NGS is in a strong position and is looking confidently towards the future.

Help and Support

For assistance with issues regarding access to and use of the NGS core node at Leeds, or getting a digital certificate, or should you wish to talk to a local expert please contact the University of Leeds ISS Helpdesk (helpdesk@leeds.ac.uk or telephone 0113 343 3333). Other enquiries, in particular those regarding other nodes of NGS, should be directed to the NGS Helpdesk via email to: support@grid-support.ac.uk or by phone 01235 446822.

Further Information

Leeds NGS contact:
Dr Joanna Schmidt, White Rose Grid e-Science Coordinator
(email: j.g.schmidt@leeds.ac.uk)

The project web site:
http://www.grid-support.ac.uk

References

[1] http://www.grid-support.ac.uk/
[2] http://www.wrgrid.org.uk/
[3] http://www.ngs.ac.uk/access.html
[4] http://www.grid-support.ac.uk/content/view/355/244/
[5] http://www.nesc.ac.uk/training/