

Introducing the Access Grid Support Centre

Michael Daw, University of Manchester

A report to the Core e-Science Programme recommended the establishment of an Access Grid Support Centre (AGSC). This paper describes how the AGSC (run by the University of Manchester and managed by UKERNA) provides benefits to the UK academic community. The AGSC provides support in many different ways, including: technical support for users and operators; advice on procurement, interoperability and wider collaboration issues; services to improve the experience of using Access Grid, such as Virtual Venue Server, Multicast-Unicast Bridge, IG Pix Server and IG Recorder; and Quality Assurance (QA) testing.

This paper is an introduction to the Access Grid Support Centre (AGSC). It describes how services offered by the AGSC benefit the e-Science and wider academic community.

Access Grid has saved vast amounts of time, energy and money enabling productive meetings and research between collaborators who are spread across the UK and beyond. Many projects and initiatives would have been almost impossible without the use of a tool such as Access Grid. Examples of projects that use Access Grid as an integral part of their work include RealityGrid¹ and myGrid².

The initial rollout programme of 12 Access Grid nodes to the e-Science Regional Centres was accomplished without a formal support structure. However, with the number of nodes increasing rapidly, it is difficult to assure a high quality experience without such a structure. If quality slips, then so does the effectiveness of Access Grid and many - if not all - benefits are lost. These issues (among others) were examined in a report commissioned by Tony Hey for the Core e-Science Programme in 2002³. This report recommended the establishment of the AGSC.

UKERNA were tasked to manage the procurement process of the AGSC. Early in 2004, they awarded the contract to the University of Manchester, which has been providing informal support to the UK since establishing the country's first Access Grid node in August 2001.

The AGSC provides support in a number of different ways:

- First and second-line support of Access Grid for technical operators and end-users
- The provision of a number of services to improve the experience of using Access Grid
- Quality Assurance (QA) testing of registered Access Grid nodes
- The promotion of good practice guidelines on the use of Access Grid through workshops and on-line documentation
- Advice on recommended hardware, software and configurations for Access Grid
- Help and advice for interoperation between Access Grid and other collaborative technologies (e.g. VRVS, H.323/H.320)
- Help implement recommendations of forthcoming reports
- Liaise with commercial providers of Access Grid technology.

QA testing has been in use in the H.323/H.320 videoconferencing community since before 1997 when the JANET Videoconference Switching Service (JVCSS) was established. QA testing is useful to ensure that videoconference

facilities maintain a consistent high quality so that users have an effective and productive experience without being disturbed by poor audio or video. The procedure for AGSC QA testing has benefited from the experience of the JVCSS QA tests. In particular, procedures for the AGSC QA tests were devised in the light of a comprehensive JVCSS QA test evaluation⁴.

As well as testing audio and video quality in a similar manner to the JVCSS tests, the AGSC also tests aspects that are unique to Access Grid, such as use of the MUD (Access Grid side-band text chat); whether sites are running multicast beacons; multicast connectivity; and shared presentation software. The tests are also used to help disseminate updated good practice or new standard technologies for Access Grid nodes.

The AGSC hosts a number of services that improve the experience of using Access Grid for both operators and end-users. Access to services is controlled for the purpose of license issues, to enable auditing, and for security.

An inSORS virtual venue server offers the capability to create venues specifically for the use of UK sites and projects. The server software supports full interoperability with Access Grid v2.x so that sites can connect with each other no matter what client software they are running. It offers the capability for enhanced security with encrypted media streams and access-controlled venues based on X.509 certificates.

Multicast-unicast bridges allow sites that do not have fully functioning multicast to take part in Access Grid sessions. Sites that are new to Access Grid may not yet have multicast enabled on their local network. Multicast may also occasionally 'break', even at an established site (e.g. when network router software is upgraded). Either way, it is necessary to have access to a bridge as a fallback solution so that Access Grid can still be used. Before the

AGSC, bridges were provided on an ad hoc voluntary basis by fellow sites. The AGSC bridge has a robust configuration and is always available for use by registered users.

Presenting slides over the Access Grid can be problematic. There are drawbacks with most commonly used solutions. For example, Distributed PowerPoint (DPPT), available as part of Access Grid v1.x, does not support slide transitions or animations and has an unintuitive command-line interface that makes it difficult to switch between different sets of slides. The AGSC runs an inSORS™ IG Pix™ Presentation Software Server. IG Pix does not require bespoke software for sites to view the presentation because slides are received through a web browser. IG Pix supports a wide subset of PowerPoint functionality and presentation files do not need to be distributed to remote sites prior to the meeting.

It is now possible to record Access Grid meetings for future playback. The AGSC hosts an IG Recorder™ server that stores video and audio data streams broadcast to a virtual venue. This service is useful for seminars and similar events that may usefully be viewed at a later date.

As well as recommending the establishment of the AGSC, the e-Science videoconferencing report also recommended a number of other developments, such as a UK programme for collaborative technologies research and development and work on interoperability between different videoconferencing systems. Many of these developments will be implemented via the AGSC.

¹ <http://www.realitygrid.org>

² <http://www.mygrid.org.uk/>

³ *Multi-Site Videoconferencing for the UK e-Science Programme*
(http://www.nesc.ac.uk/technical_papers/UKeS-2002-04.html)

⁴ *An Evaluation of Quality Assurance Tests for
JANET Videoconferencing Services and
Recommendations for Improvements to the
Testing Programme*
(<http://www.jvcs.ja.net/docs/qatest.pdf>)