

Grids for eResearch: An Australian Perspective

John O'Callaghan (APAC, Australia)

In broad terms, a 'Grid' is a collection of distributed computing resources that appear to an end user as one virtual computing system.

Grids can provide services to manage data sets on different storage systems, to provide seamless access to the most appropriate computing resource and to support cooperation by distributed research teams and communities. In this sense, grids are an essential infrastructure for eResearch.

APAC is installing a grid to integrate the advanced computing resources of the APAC National Facility and the APAC partner facilities, thereby providing Australian users with more effective access to application software, scientific and technical databases, visualisation facilities and instruments.

The APAC Grid is building on the experience of the GrangeNet program which is demonstrating advanced communications and grid services on a broadband network. It is also building on the capacity upgrades being installed by AARNet for the national research and education network and its international links.

The design of the APAC Grid is conforming to the emerging international standards for gridservices and will therefore interoperate with large-scale grids being developed in other countries.

The APAC Grid is supporting research communities participating in national and international initiatives, including astronomy, high-energy physics, earth systems, geosciences, chemistry and bioinformatics.