SCIENCE GRID THIS WEEK

September 28, 2005

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Calendar/Meetings

September 2005

26-30, GridKa School 2005, Karlsruhe, Germany

26-30, APAC'05: The APAC Conference and Exhibition on Advanced Computing, Grid Applications and eResearch, Gold Coast, Australia

26-30, Cluster 2005, Boston, Massachusetts

26-29, iGrid 2005 Workshop, San Diego, California

27-29, Joint Open Science Grid/EGEE Operations Workshop, Abingdon, United Kingdom

29-30, GT4 Tutorials at APAC'05, Gold Coast, Australia

29-30, 5th Annual Global LambdaGrid Workshop, San Diego, California

29-30, First International Digital Curation Conference, Bath, UK

October 2005

3-6, GridWorld, Boston, Massachusetts

3-6, GGF15, Boston, Massachusetts

Full Calendar

Image of the Week

Feature Story

PRAGMA Promotes Pacific Rim Collaboration

Attendees at the PRAGMA 8 Workshop in Singapore.
Image Courtesy Kenny Hoi, Bioinformatics Institute, Singapore

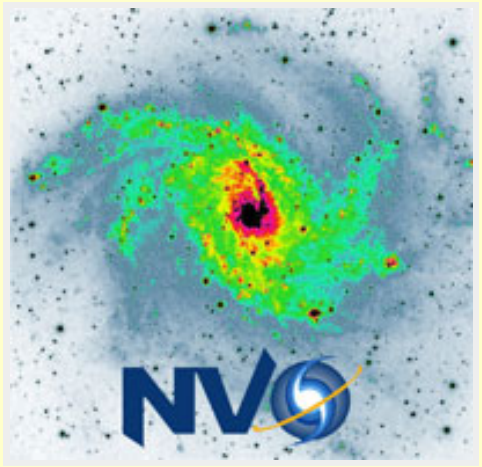
The Pacific Rim Applications and Grid Middleware Assembly promotes collaboration and resource sharing among researchers in the Pacific region. The project is a grass roots effort that deploys infrastructure and uses grid computing applications to ensure that different suites of middleware being developed in the Pacific Rim work together.

"In the last ten years, enough physical and social infrastructures have been put in place to support true international collaboration," said Peter Arzberger, chair of the PRAGMA Steering Committee. "Instead of a series of bilateral relationships, we wanted to do things in a multilateral fashion."

The PRAGMA founders didn't want to repeat the mistakes of the cluster computing community, whose members developed hardware and software independently and ended up with a system that didn't work well globally.

"We were not looking to replace the fine organizations already taking care of trans-Pacific Internet connectivity or global grid standards, but thought there was a real opportunity to focus on developing, testing and integrating grid applications and middleware at a technical and at a people level," said Phil Papadopoulos, National Science Foundation co-Principal Investigator of

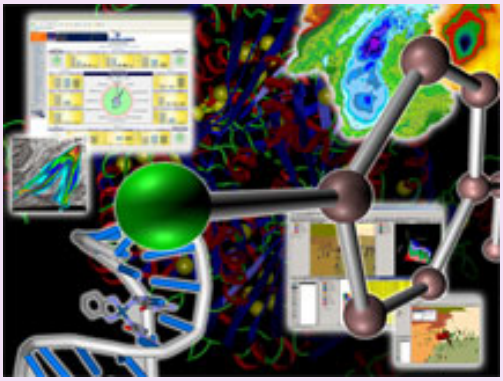
Astrophysicists Go Virtual



The U.S. National Virtual Observatory recently hosted a second Summer School in beautiful Aspen, Colorado, sponsored by the National Science Foundation and NASA. Over eight days, 39 participants worked with experienced NVO scientists and software developers to learn how to do astrophysics with the Virtual Observatory. The course included intense hands-on, practical experience using VO tools and services for data discovery, data access and high-performance computing. At the conclusion of the school, students collaborated to build major projects that used the VO for scientific discovery.

"I found the Summer School exceptionally valuable," said Roberta Allsman, a collaborator on the Large Synoptic Survey Telescope. "The exposure to a suite of VO tools and libraries will make VO-enabling my various products and datasets much easier than if I had to implement from scratch."

Two sessions covered grid computing concepts, including an overview of the TeraGrid facilities available to qualified scientific users. Astronomical applications using the VO were also discussed. In one case, researchers are reprocessing the full 12-terabyte Sloan Digital Sky Survey to understand quantitatively how galaxy form and structure has changed



Science applications using the GRASE VO and ACDC Grid. (Click on image for larger version.)
Image courtesy of Mark L. Green, Center for Computational Research, University at Buffalo.

The Grid Resources for Advanced Science and Engineering Virtual Organization supports the Advanced Computational Data Center Grid Portal located within the University at Buffalo's Center for Computational Research. The ACDC Grid Portal executes and monitors computational jobs and storage element files on several different grid infrastructures. This image shows examples of GRASE VO and ACDC Grid applications from biology, earthquake engineering, hydrodynamics and geophysics.

Link of the Week

GATE Application Video
View a three-minute video about the Geant4 Application for Tomographic Emission, a biomedical application running on EGEE. GATE is an example of how grid computing can be used to advance cancer treatment by speeding up sophisticated simulation software to accurately predict the effect of radiation treatment on tumors. (Links to MPEG and WM9 versions of the video are at the top of the page.)

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PRAGMA.

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Grids in the News

New Crystal Structure of Alzheimer's Drug Predicted
GRIDtoday, September 26, 2005

A challenge, presented at last year's UK e-Science All Hands meeting, has resulted in an e-Science project achieving one of the holy grails of the pharmaceutical industry -- the computational prediction of a previously unidentified crystal structure, or polymorph, of a drug molecule.

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Grid shows new way to thwart Wiki vandals
Innovations Report, September 23, 2005

When Tim Berners-Lee invented the World Wide Web 15 years ago, he always intended that it should be easy for people to write to it, not just read from it. But if websites are opened up to anyone, they often get vandalised by people with axes to grind.

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Materials scientists get the whole picture with new e-Science technique
EurekAlert, September 21, 2005

An output of the UK e-Science Programme is helping researchers to find needles of insight in the haystack of data generated by bigger and better facilities to probe matter with intense particle or X-ray beams. Dr Lakshmi Sastry will present the work at the e-Science All Hands meeting in Nottingham on Monday 19 September.

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through the history of the universe. The reprocessing will give greater understanding of galactic history and evolution and refine the classical Hubble classification.

In another application, the Palomar-Quest and 2MASS sky surveys are being processed to a standard "hyperatlas" projection, to improve the signal-to-noise ratio and to enable multi-wavelength data mining. This technique brings all the photons together from different observation times and different wavelengths, allowing pattern matching (source detection) simultaneously in many pixel planes. Applications include discovery of very distant quasars and transient sources such as asteroids, gravitational lensing, supernovae, and other "sudden lights in the sky."

"The best outcome of the NVO summer school is the amount of incredibly useful information and resources you take away in a short period of time," added Brian Kent from Cornell University.

Learn more at the NVO Web site. The proceedings of the School will be available by October 1.

—Roy Williams, Caltech Center for Advanced Computing Research