

Calendar/Meetings

MAY

18-19, [Rocks-A-Palooza I](#) (Rocks All Hands Meeting), SDSC, La Jolla, CA

22-25, [International Conference on Computational Science 2005](#), Atlanta, GA

23-27, [International ICFA Workshop on HEP Networking, Grid and Digital Divide Issues for Global e-Science](#), Daegu, Korea

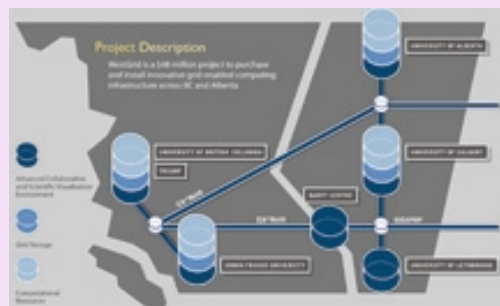
24-26, [Second EGEE/LCG Grid Operations Workshop](#), Bologna, Italy

JUNE

1-2, [Open Science Grid Applications Workshop](#), SLAC, Menlo Park, CA

[Full Calendar](#)

Image of the Week



Map of Western Canada Research Grid Resources. (Click on image for full-size pdf version.)

Courtesy of WestGrid

The [Western Canada Research Grid](#) is a \$48 million project to integrate grid-enabled high performance computing and collaboration infrastructure at institutions across western Canada.

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Feature Story

ISGC 2005 Focuses on Collaboration in Asia-Pacific



ISGC 2005 Group Photo. Courtesy of the Academia Sinica Computing Centre, Taipei, Taiwan.

Two hundred scientists from Asia, Europe and North America gathered to discuss grid computing collaboration, development and advancement in the Asia-Pacific region at the third annual International Symposium on Grid Computing. The ISGC, which took place April 26–29 at the Academia Sinica in Taipei, Taiwan, introduces advanced grid technologies to diverse communities and works to establish a region-wide infrastructure for grid computing.

"This is the only conference in the region focused on cooperation and collaboration between communities in Asia-Pacific countries," said Simon Lin, Director of the Academia Sinica Computing Centre. "Often, scientists from different regions in Asia, and even those from the same country, don't have much opportunity to talk to each other. We try to provide that forum at ISGC, to introduce researchers to a new paradigm of cooperation."

The main thrust of the ISGC, sponsored by Taiwan's National Science Council, Academia Sinica and HP, was grid computing in the Asia-Pacific region. Plenary lectures, presentations and regional reports focused on grid core technology and architecture, applications, infrastructure interoperation, and collaboration. Large grids in Europe and North America, and worldwide scientific applications in many fields

Profile

Gabriele Carcassi: ATLAS Security Guard

Gabriele Carcassi has been writing software since he was 10 years old. Now a software engineer at Brookhaven National Laboratory, Carcassi works on the security aspects of grid computing for the ATLAS experiment and the experiments at BNL's Relativistic Heavy Ion Collider.



Gabriele Carcassi

"One aspect of grid security is accountability," said Carcassi. "Previously, all jobs and file transfer work submitted to the grid ran on one local account, and there was only one account per virtual organization. We are working on ways to increase accountability; to tell who did what on which grid computing site."

Much of his work on grid security in the past year has focused on re-engineering the Grid User Management System for the ATLAS experiment, which will begin taking data at the Large Hadron Collider at CERN in 2008. Many sites that participate in U.S. ATLAS will have a central GUMS server that manages the mapping of grid credentials to different users' site accounts.

"Here's basically how things work if you're in ATLAS and want to run a job on the grid," explains Carcassi. "First, you log on to the computer where you usually do your work, either at your home institution or at a place like BNL. You would already have your own grid certificate installed on that computer. With your certificate, you generate a proxy, a temporary credential. You submit your job to run

Link of the Week

GRIDS Center

The Grid Research Integration Development and Support Center is part of the National Science Foundation Middleware Initiative. Discover the GRIDS Center Software Suite, read a primer on grid computing and explore the comprehensive grid projects database on this Web site.

Grids in the News

Grid Licensing: Life in the Middleware Jungle

GRIDtoday, May 16, 2005

By Owen Appleton, CERN

Grid computing is here ... almost. Rarely out of the IT news for long, it now seems certain that this new networking system will be used extensively by both the industrial and academic sectors over the next decade, albeit for different uses.

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Processing for Science

"@Home" projects band together and proliferate

Scientific American, May 16, 2005

By Charles Q. Choi

Fans of the spacetime continuum can now uncover gravitational ripples at their desks thanks to the February launch of Einstein@Home. The project is one of the latest of at least 60 "@home" projects now on the Internet, in which personal-computer users can donate spare processor power to help solve scientific problems.

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Grid computing: a real-world solution?

The Register, May 13, 2005

By Quocirca

The problem with grid computing has traditionally been tying it down into a real-world context. The theory is great – getting lots of individual technical components working together as if they were one big resource – but it's

including high-energy physics, astronomy, health sciences and ecology were represented. Non-science applications, such as digital archiving for libraries and museums, were also discussed.

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Internet2 Meeting Highlights Advanced Networking, Diverse Applications



Jim Williams of Indiana University (right) discusses advanced networking at the Spring 2005 Internet2 Member Meeting. © Steven Wallace.

The Internet2 consortium brings together U.S. universities, corporations and other organizations to research high-performance next-generation network technology and to accelerate the creation of the next Internet. Over 700 members attending the Spring 2005 Internet2 Member Meeting, held May 2-4 in Arlington, Virginia, discussed key issues in network technology, security and middleware, and learned about cutting-edge applications ranging from digital management of museum collections to real-time scientific collaborations. .

"We had a record number of attendees at this year's spring meeting," said Laurie Burns, Internet2's executive director for member and partner relations. "One hundred participants were from outside the U.S., over half were from the university community, and industry and other educational communities were also well represented. Everyone came together to share the latest updates in advanced networking and applications and to get substantial work done."

The diverse meeting program included 50 track sessions and almost 80 meetings of working groups, interest groups, and workshops. The opening

on a certain site, and the "gatekeeper" at that site exchanges information with your proxy. If the gatekeeper determines that you're allowed to run your job, for example if your certificate is listed as part of the ATLAS virtual organization, it will map you to a local account that would allow you to execute the job."

"Although this might sound complicated," noted Carcassi, "it's based on concepts and tools that you use whenever you buy something securely over the Internet."

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Grids Playing Prominent Role in Life Science Research

Biotech and pharmaceutical organizations are increasingly looking to apply Grid computing to their research efforts.



Typically, life science software that run on Grids include a wide range of applications, with the most common ones being molecule screening algorithms and DNA sequence analysis routines.

The nature of these applications makes them good candidates for Grid computing. For example, in the case of molecule screening, the typical computational problem involves checking to see if any of the millions to billions of molecules in collection have the right 3-D shape and chemical properties to potentially be used to fight a disease. The common approach here is to give every Grid node the disease target against which each molecule will be tested. Then, the Grid application divides up the collection of molecules and distributes them to the nodes. This type of application is often called a molecular docking application.

With the DNA sequence routines, the nodes hold portions of a genome database and then the genetic sequence to be compared is sent to all the nodes to be checked against the larger database.

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the wackier or conversation stimulating applications that have received all of the attention.

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Office of Science/
U.S. DOE

keynote speech was delivered by Arden Bement, Jr., director of the National Science Foundation, who discussed cyberinfrastructure for user-based science, and the importance of investment from government, industry and academia in support of science. Infrastructure for science and research was also the focus of a general session dedicated to the collaborative work between Internet2 and the National LambdaRail.

[Read more...](#)

This article, written by Salvatore Salamone, the Senior IT Editor of Bio-IT World, originally appeared in the May 16, 2005 issue of GRIDtoday.