iGrid 2005
Global Lambda Integrated Facility
http://www.startap.net/igrid2005

Event Dates and Location
California Institute for Telecommunications and Information Technology [Cal-(IT)2]
University of California, San Diego

iGrid Workshop: 26-29 September 2005
GLIF Meeting: 30 September 2005

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CALL FOR PARTICIPATION

For full consideration, proposals are due 1 February 2005
Submit to Maxine Brown <maxine@uic.edu>. See details below.

SHOWCASING THE GLOBAL LAMBDA INTEGRATED FACILITY

A global cyberinfrastructure of computing and communication technologies is emerging to help researchers better understand complex systems -- from the micro to the macro level, in both time and space. Driven by the demands of application scientists, engineered by a worldwide collaboration of leaders in advanced networking, and enabled by grid middleware developers, this infrastructure has, at its core, new architectural approaches to next-generation internet design and development using optical networking. A single optical fiber can carry multiple wavelengths of light, or "lambdas," enabling multiple networks to run in parallel on the same fiber -- research & education networks, commodity networks, or application-specific networks. Communities of interest can create their own private networks or can share networks, creating on-demand "LambdaGrids" of interconnected, distributed computing, sensor and instrument resources that enable new infrastructures for advanced science.

The Global Lambda Integrated Facility (GLIF) is an international virtual organization that supports persistent data-intensive scientific research and middleware development on LambdaGrids. This year's iGrid (international Grid) event will showcase advances in scientific collaboration and discovery enabled by GLIF, by providing a forum for the world's premier discipline scientists, computer scientists and network engineers to work together in multidisciplinary teams to understand, develop and demonstrate innovative solutions in a LambdaGrid world.

iGrid 2005 is a coordinated effort to accelerate the use of existing multi-10 Gbps international and national networks, to advance scientific research, and to educate decision makers, academicians and industry researchers on the benefits of these hybrid networks. iGrid 2005 provides an international testbed for participants to collaborate on a global scale to advance the state of the art in high-performance computing and communications.

iGrid 2005 organizers challenge the international research community to demonstrate application advances and middleware innovations developed for the LambdaGrid. iGrid 2005 welcomes your participation to showcase novel techniques for problem solving enabled by GLIF. You may propose to do a real-time demonstration or presentation or participate in one of three "challenges." To participate, you must submit a proposal of your intended activities (proposal requirements are described below) by February 1, 2005 for full consideration. You will be notified of acceptance by mid-March.

CALL FOR REAL-TIME DEMONSTRATIONS AND SYMPOSIUM PRESENTATIONS

REAL-TIME DEMONSTRATIONS will provide "windows" into the worldwide LambdaGrid. Scientists who generate terabytes and petabytes of data on remote computers or instruments can demonstrate how they use the LambdaGrid to interactively visualize, analyze, and correlate data from multiple sites; results will be projected onto large visualization and/or virtual-reality displays. Previous iGrid events featured applications in art, bioinformatics, chemistry, cosmology, cultural heritage, education, manufacturing, medicine, geoscience, neuroscience and physics. They featured a variety of Grid middleware developments, with emphasis on data management grids, data replication grids, visualization grids, data/visualization grids, computational grids, access grids, and grid portals. And, they utilized a variety of computer-based technologies, including distributed computing, visualization and virtual reality, tele-science, data mining, remote instrumentation control, collaboration, high-definition media streaming, and human/computer interfaces.

SYMPOSIUM PRESENTATIONS complement the demonstrations. Tutorials, workshops, keynote presentations and lectures by renowned scientists and technologists about GLIF activities, optical networking and control plane management, middleware developments and application advances, will provide attendees with an in-depth understanding of today's emerging global cyberinfrastructure so that they can incorporate these new technologies into their future plans.

CHALLENGES have been part of all previous iGrid events. iGrid challenges the world's scientists and technologists to advance the state of the art, while providing the infrastructure and the expertise to assist. For 2005, we pose the following challenges to the international community.

-- TERABIT LOCAL AREA NETWORKS (LANs): While scientists are learning to optimally use wide-area gigabit networks, there is interest in developing multi-terabit networks by first prototyping them on a local scale. Who wants to help design a Terabit LAN, and who has data-intensive applications that need it?

-- SUPER-HIGH-DEFINITION (SHD) DIGITAL CINEMA: Four times the resolution of HDTV, SHD projection technology is emerging from the research laboratory. Who has high-resolution computer-generated imagery to show, and who is developing the tools and techniques for secure streaming media?

-- HIGH-RESOLUTION VIRTUAL REALITY: A large-format autostereo tiled display and possibly a 6-wall CAVE will be available. Who has high-resolution three-dimensional computer-generated imagery to show?

Let us know if you are interested in any of these challenges and we will put you in touch with others who are working on these problems for iGrid 2005.

All participants will have the opportunity to submit an article to the Elsevier journal "Future Generation Computer Systems" (FGCS); the editor-in-chief has agreed to publish a special iGrid 2005 issue. Papers should describe research activities and findings, and are due one month after iGrid 2005 to ensure timely publication.

SELECTION CRITERIA AND DISCLAIMER

A Program Committee will review iGrid 2005 proposals for real-time demonstrations and symposium presentations. Information on how to submit proposals is given below. Criteria for acceptance include use of GLIF networking resources, as well as demonstrations and/or presentations of LambdaGrid-enabled scientific discoveries and/or technological innovations.

If you wish to participate in iGrid 2005 but are not familiar with GLIF, we will put you in touch with GLIF participants in your country. If your network organization is not yet part of GLIF, we will attempt to work with them or to provide you with computer accounts at GLIF sites so you can demonstrate how your advanced application will perform once a ubiquitous optical cyberinfrastructure is in place.

Each real-time demonstration and/or symposium presentation must have a representative attend iGrid 2005 to present.

DISCLAIMER: We are in the process of obtaining external funding assistance for the iGrid event, and iGrid 2005 may be cancelled if such assistance is not forthcoming. Your response to this Call for Participation will help substantiate our funding requests to government agencies and corporate partners for support.

LOCATION AND ATTENDANCE

This event will be held at the California Institute for Telecommunications and Information Technology [Cal-(IT)2] building on the campus of the University of California, San Diego (UCSD) in La Jolla, California. iGrid 2005 activities will take place 26-29 September 2005, followed by GLIF meetings on 30 September 2005.

On-site attendance for iGrid 2005 will be limited; registration information will be available in late spring 2005.

SUBMISSION INFORMATION: Proposals due 1 FEBRUARY 2005 for full consideration

(A) REAL-TIME DEMONSTRATIONS (Organizer: Maxine Brown)

1. Demonstration title
2. Primary contact person's name, institution and e-mail address
3. Contact information for collaborators (name, institution, e-mail)
4. Project Description
    a. One-paragraph summary of your project and its significance
    b. URL for further project documentation
    c. A graphical image (not logo) of your application (JPEG or TIFF) is encouraged
    d. How does your project utilize advanced networking? Why is this important?
5. Hardware/Software requirements: Do you need to place any special hardware (e.g., disk stores or clusters) at GLIF sites? Do you need computer accounts at participating sites? What software do you need on these machines?
6. Network requirements: What networks (locally/nationally/internationally) will you access? (Note: If these networks are not yet in place, when are they expected to be operational? And, at what speeds?)
7. Network usage: How much bandwidth does your application use?

(B) SYMPOSIUM PRESENTATIONS (Organizer: Tom DeFanti)

1. Type of presentation
    a. Tutorial, workshop, or lecture?
    b. For a beginner, intermediate or advanced networking audience?
    c. If a tutorial or workshop, is it a half day or full day? NOTE: Lectures will be 30 minutes to 1 hour. Actual times will be determined once the Symposium's schedule is finalized.
2. Presentation title
3. Presenter's name, institution, e-mail address
4. Contact information for other presenters (name, institution, e-mail) if a tutorial or workshop
5. Presentation description
    a. One-paragraph abstract
    b. URL for further presentation documentation
    c. A graphical image of your presentation (JPEG, TIFF, PPT) is encouraged
6. Audio/visual requirements: Projectors for PPT presentations will be provided. Do you have any special A/V needs?

Submit Real-Time Demonstration and Symposium Presentation proposals via email by 1 February 2005 for full consideration to: Maxine Brown <maxine@uic.edu>

Proposals will be reviewed by the iGrid 2005 Program Committee. Further input may be requested. Results from the Program Committee will be distributed by mid-March 2005.

CONTACT INFORMATION

For further information, contact:
Maxine Brown <maxine@uic.edu>
Tom DeFanti <tom@uic.edu>
iGrid 2005 co-organizers and StarLight/Euro-Link/TransLight co-principal investigators
Electronic Visualization Laboratory, University of Illinois at Chicago
URL: http://www.startap.net/igrid2005

For information on GLIF, see <www.glif.is>.
For information on the Elsevier journal "Future Generation Computer Systems (FGCS)" iGrid 2005 special issue, contact Cees de Laat <delaat@science.uva.nl>.
For information on the FGCS iGrid 2002 special issue that was published in August 2003, see <http://www.science.uva.nl/~delaat/elsevier-igrid2002.html>.
For information on previous iGrid events, held in 1998, 2000 and 2002, see <www.startap.net> and <www.igrid2002.org>.