Spring 2006
Volume 4, Issue 2

GridConnections

News and Information for the Global Grid Forum Community

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GGF MISSION: LEADING THE PERVASIVE ADOPTION OF GRID COMPUTING FOR RESEARCH AND INDUSTRY.

GGF Perspectives and Directions

by Mark Linesch, Hewlett Packard, GGF Chair

As our community gathers in Tokyo for GGF 17, we find ourselves once again talking about the broad industry theme of convergence. Although there are numerous definitions for the term, I am referring to the notion of "coming together" – usually to achieve a common purpose that the separate entities could not achieve alone. GGF is a place where we celebrate diversity. GGF is also a place where we encourage convergence – particularly around standards and the coming together of our worldwide community to further our mission of pervasive adoption.

The recent announcement on March 15th, 2006 by IBM, Intel, Hewlett Packard, and Microsoft regarding the convergence of critical web services specifications upon which GGF specifications depend was important news for the entire industry. The news included the publishing of a new document entitled "Toward Converging Web Service Standards for Resources, Events, and Management" available from each of the vendors websites. This document is a result of the companies' recent work to develop a convergence path that will, in time, reconcile overlapping web services standards and ensure a more unified web services infrastructure to support grid-related services. GGF and its members look forward to participating in development and review of these proposed specifications once they are moved into an open standards process and are confident we will be able to adapt our service definitions to the converged specifications with what we hope will be little difficulty. Dave Snelling, GGF Vice Chair of Standards provides important perspectives on how to approach this important industry development later in this newsletter.

Convergence is also an important theme associated with the work that our Community function is undertaking as highlighted by Robert Fogel, Vice Chair of Community in his article later in this newsletter. The Community team has embarked on several

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Converging Web Service Standards

By David Snelling
Vice Chair, Standards

Recently, IBM, Intel, Hewlett Packard, and Microsoft published a new document entitled "Toward Converging Web Service Standards for Resources, Events, and Management," which is available on any of the company's web sites. While this is indeed a welcome move in the industry at large, it presents us in the Grid community with a now familiar dilemma. How do we continue to make progress on higher-level specifications during the inevitable delay created as the converged standards solidify?

As an organization, the GGF is in many ways very well prepared for this industry development and practical approaches are available that enable us to continue the development of our standards. Note that the research work, community development, and Grid promotional activities are virtually unaffected by this and therefore a significant portion of GGF's activities can continue unperturbed.

The approach which I personally recommend is for each working group to determine if their work actually relies explicitly on the infrastructure. While we should all assume that this stateful infrastructure is available (particularly for specifications in the OGSA family), not all specifications need to expose the stateful interfaces explicitly. For example, the JSDL-WG has published their V1.0 specification without reference to the infrastructure. I do not, however, encourage you to "find ways around" exploiting the infrastructure or to re-invent it. It will be this infrastructure that provides the standard basis for dynamic discovery, uniform management, and commercial exploitation of even the most advanced of our Grid concepts. Therefore, if the stateful infrastructure would be useful to your working group's specification, your working group should embrace the infrastructure and make use of what is available now.

Just what is available now? There are basically three options for providing a stateful infrastructure: WSRF, WS-Management, or WSI plus specific stateful operations. But before choosing one of them, working groups have the option to describe their specification's capabilities in abstract terms. For example, the draft version of OGSA-BES describes a container's state as "IsAcceptingNewActivies: Boolean" without defining the rendering used to expose that state to the client. The specification goes on to define two renderings for these abstract interfaces (WSRF and WSI).

My preferred rendering would be to use the now officially published OASIS Standard for the WSRF suite of specifications. These capture all the concepts that the reconciliation roadmap refers to and provide several platforms on which to base implementations. My second choice would be stable versions of the WS-Transfer, WS-Eventing, and WS-Enumeration specifications which are now posted with the W3C. Although not yet carrying the status of an open standard, renderings based on these specifications are likely to be easier to port to the final reconciled specifications, assuming my reading of the roadmap is correct. If these specifications meet your needs, then you will not need to reinvent any concepts, as would be the case with a WSI only based rendering. Again, remember that if your specification genuinely does not require stateful interactions, then a WSI only approach is clearly the optimum – just be careful not to reinvent any wheels.

Although the industry is on a path toward convergence, practical approaches exist to continue to make progress on GGF standards as these converge standards solidify. While there is more to investigate and uncover regarding the impact of these converged standards on the work of GGF, the effort of recasting your specifications to the new renderings appears straightforward and will pay great dividends down the road regarding interoperability.

The GGF invites anyone interested in discussing this issue to attend a BoF at GGF17 in Tokyo and join a number of experts in open dialogue around the technical aspects of the reconciliation roadmap. There will be GGF experts with extensive experience in the use and implementation of both technologies, ready to discuss convergence and migration issues.

"...the industry is on a path toward convergence ..."

SponsorSpotlight

Grid Computing: An Innovation Perspective

By Elias Kourpas, Ph.D.
Strategy & Technology Executive

Over the last few years we have witnessed the evolution of grid computing from a niche technology associated with scientific and technical computing, into a business-innovating technology that is driving increased adoption into commercial lines of business. At IBM, we view grid as a game changing technology that fosters innovation and collaboration while helping customers establish a competitive advantage in their market.

IBM has made investments in all aspects of the grid domain: development and adoption of standards, technology development and integration, deployment of innovative business solutions, and nurturing of a robust ecosystem that extends to software developers, resellers and distributors.

In support of commercial adoption, IBM is a strong advocate for open industry standardization. Our fundamental approach has been to develop and adopt grid standards based on the emerging foundation of a "services oriented" model that is increasingly being adopted by the IT industry. Web services, in particular, provide a component model for the composition of functions that make up and support distributed systems and grids.

IBM's grid technical strategy extends the company's leadership in software, systems and storage virtualization by focusing on three main areas: workload virtualization, information virtualization, and grid management. In addition, IBM is actively working on new programming models, tools, and techniques for developing and enabling distributed grid applications.

To help customers achieve immediate value, IBM has developed and deployed the largest set of industry-leading solutions targeted to specific market segments. These solutions range from simple, easy to deploy integrated solutions that help customers begin their grid journey (e.g. IBM Grid and Grow™) all the way through to more elaborate solutions that aim to support government economic growth (e.g. IBM Economic Development Grid). Furthermore, IBM provides customers a clear path for grid expansion along the grid spectrum, from virtualizing like resources within departments, to virtualizing unlike resources across the enterprise, to virtualizing heterogeneous resources outside the enterprise linking external suppliers and partner networks.

Finally, to accelerate grid enterprise penetration, it is necessary to assist software developers and partners grid-enable their products and services. Therefore, IBM is nurturing an ecosystem to support the grid solution creation process. Our efforts range from educating partners and independent software vendors (ISVs) on when and where grid technologies apply through to helping create reference implementations for particular grid solutions. IBM currently offers a variety of ecosystem programs through the *Parterworld* industry network and the *IBM Value Network Initiative*.

CoreGrid Joins GGF

By Berengere Fally
Scientific Communicaton Manager, CETIC

CoreGRID is the European Research Network of Excellence on foundations, software infrastructures and applications for large scale distributed, Grid and Peer-to-Peer technologies.

The Network is funded by the European Commission within the EU's Sixth Research Framework Programme through a grant of 8.2 million Euro assigned for a duration of four years.

CoreGRID started in September 2004 and clearly aims at European scientific and technological excellence, encouraging the mobility of researchers and addressing long-term Grid research to build the foundations for the next generation Grids, from 2010 and beyond.

The Network is focused on creating a strong and durable integration of the Grid research expertise in Europe to facilitate the creation of future Grid systems not only in academic but especially in industrial environments. This way, it will contribute to accelerating Europe's drive to turn its substantial Grid research investment into tangible economic benefits.

To achieve its objective, the Network brings together a critical mass of well-established researchers (120 permanent researchers and 165 PhD students) from 42 research centers and universities who have constructed an ambitious joint programme of activities.

Operated as a European Grid Research Laboratory, this joint programme of activities is structured around six strategic and complementary research areas, organized as Research Institutes. Each of them is dedicated to the particular domain identified as of strategic importance to ensure a durable development and deployment of Grid infrastructure.

1. Institute on Knowledge and Data Management: Handling information, data, and knowledge that are required or produced by a wide range of diverse processing services.

2. Institute on Programming Models: Making the programming of Grid infrastructures as simple and transparent as possible.

3. Institute on System Architecture: Studying adaptive and dependable Grid architectures and services to design the next generation Grid middleware.

4. Institute on Grid Information, Resource and Workflow Monitoring Services: Provide scalable information service to implement a consistent view of the Grid.

5. Institute on Resource Management and Scheduling: Addressing efficient scheduling and coordina-

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Japan: Significant Commercial Grid Adoption

By Robert B. Cohen
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Japanese firms are turning to Grids for a number of reasons, not only to improve their ability to compete in global markets, but also to enhance the quality of their products and bring new products to market faster. I first noticed Japan's interest in Grids three years ago in Detroit. Soon after interviewing GM's CTO about its Grid efforts, I ran into a Toyota IT exec. He was in Detroit to learn how US firms used Grids. Thus, I was not surprised when the results of the Japan Grid study showed that Grid adoption would take off rapidly. For the computer, heavy industry, and semiconductor industries, nearly all firms would have extensive Enterprise Grids between isolated campuses by 2009, with half of the auto, banking and pharmaceutical firms having such Grids by the same year. About half of the firms in autos, computers and semiconductors would have Partner Grids by 2009, linking them with their closely suppliers and crossing corporate firewalls. This demonstrates a real commercial commitment to Grids, one that clearly sees Grids as enhancing global competitiveness.

These are the main conclusions of the recently published Japan Grid adoption study. My think-tank, The Economic Strategy Institute (ESI), and Japan's National Institute of Advanced Industrial Science and Technology (AIST) collaborated on the study. We received support from NTT Data, IBM, Intel, and Cisco. Several participants in the study will discuss Grids in Japan in a panel at GGF17.

What was unusual about the way Japanese firms use Grids? Many Japanese companies see big opportunities in Partner Grids that link suppliers and firms that produce final products (auto parts suppliers and automakers) as a key area for Grid adoption. This often links design and product development groups that have longstanding ties and great mutual trust. By establishing such links, Japanese firms can insure quality standards across firms, thus reducing production problems to a minimum and enhancing product performance. The extensive use of Service Oriented Architectures at big auto and heavy industry companies, like Toyota and Mitsubishi Heavy Industries, complements the Partner Grid goals by providing easier exchange of designs and access to data, but virtualization could take these efforts one step further.

"Many Japanese companies see big opportunities in Partner Grids that link suppliers and firms that produce final products...as a key area for Grid adoption..."

Where Japanese firms have been slow to adopt grids, as in banking, due to restrictions on hedging and riskier investments, they have developed Grid expertise in their offshore offices in London and New York. In these financial centers, Japanese bankers do hedging and invest in collateralized debt, running Monte Carlo simulations. In a few years, banks will move these experts to Tokyo, raising their Grid profile.

While Japanese pharmaceutical firms have smaller Grids than their European or US rivals, this is beginning to change. As Asia becomes a center for drug design and development, the size of R&D staff in Japan will grow. When R&D staffs draw on 500 to 700 professionals in Asia, they will be closer in scale to R&D centers in Basel or Cambridge, MA. With greater numbers of researchers in Asia, Japanese Grids would grow in size and focus on a wider range of diseases.

In sum, Japan is becoming an important center of commercial Grid adoption. In some industries, such as autos, computers, semiconductors and heavy industry, firms such as Toyota and Mitsubishi Heavy Industries have the strength to become global trendsetters in the use of Grids. Across a wider range of industries, Japan will have a significant pattern of adoption of Grids and may be the first with a substantial number of Partner Grids.

End-User & Vendor/ Developer Forums

By Robert Fogel
Vice-Chair, Community

In addition to a very rich Community program at GGF17, we will be introducing two new forums. The Voice of the Community (or VOC) forum is where end users (or consumers of Grid technology) meet to discuss their needs, wants and expectations of the Grid standards development effort. The Vendor Adoption Forum (or VAF) will bring together vendors & developers (or producers of Grid technology) to work with the GGF standards development effort to help ensure that standards are feasible and cost-effective for producers to implement. Both of these forums address the importance of producing effective standards that are widely adopted and address real consumer needs. By participating in either of these forums, you can help influence the standards that are being developed by GGF.

The goal of the Voice of the Community (VOC) forum is to bring Grid technology consumers together to capture requirements and use cases that can then be incorporated into the GGF standards development effort. At GGF 17, one session is dedicated to the VOC forum. It will have three parts: 1) understanding Grid technology in order to make a business case for how the technology can impact your business, 2) identifying and prioritizing your use cases and requirements; and, 3) working with the GGF Standards function to represent the use cases and requirements in the standards development effort. Ultimately, the result is intended to ensure that GGF Grid standards are relevant to consumers so that producers in turn implement the standards into products that consumers need, want and expect.

The goal of the Vendor Adoption Forum (VAF) is to bring Grid technology producers together to work with the GGF standards development effort, to identify issues and constraints that make it cost-effective for producers to adopt the standards. This session is also organized in three parts: 1) understanding Grid technology in terms of being able to build a market for products that consumers will need, want and expect, 2) identify issues and constraints that make it feasible and cost effective for producers to adopt standards; and, 3) work with the GGF Standards function to represent these issues and constraints in the standards development effort. Ultimately, this forum is intended to ensure that standards reflect the economic interests and practical concerns of producers who implement the standards.

Remember, this is your chance to be heard and to help influence the important standards that are being developed by GGF for Grid implementations worldwide. You do not have to be a Grid expert in order to participate. The only thing that you need to bring to these forums is your perspective as either a consumer or a producer.

CoreGRID Joins GGF

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tion of all relevant resources within a Grid environment.
5. Institute on Resource Management and Scheduling: Addressing efficient scheduling and coordination of all relevant resources within a Grid environment.
6. Institute on Grid Systems, Tools, and Environments: Integrating various middleware, tools and applications for problem solving.

Due to its commitment to structure the European research by integrating the critical mass of expertise and promote scientific and technological excellence within and beyond the Grid research community, the CoreGRID Network of Excellence is making sure today's research will answer tomorrow's market needs. As the sustainable adoption of Grid technologies requires reliable standards, CoreGRID researchers actively participate in the Global Grid Forum to facilitate this joint objective.

Visit our website and subscribe to our quarterly newsletter at **www.coregrid.net**.

GGF Document Series

New since GGF16:

GFD.63
Copyright, Disclaimer and Intellectual Property Statements
Author: D. Martin

GFD.64
Grid Scheduling Use Cases
Author: R. Yahyapour

GFD.65
Configuration Description, Deployment, and Lifecycle Management (CDDLM) Component Model v 1.0
Author: S. Schaefer

GFD.66
Use of SAML for OGSI Authorization
Authors: V. Welch, R. Ananthakrishnan, F. Siebenlist, D. Chadwick, S. Meder, L. Pearlman

GFD.67
OGSI Authorization Requirements
Authors: V. Welch, F. Siebenlist, D. Chadwick, S. Meder, L. Pearlman

GFD.68
Workshop on Grid Applications: From Early Adopters to Mainstream Users
Authors: D. Wallom, T. Kielmann

GFD.69
Configuration Description, Deployment, and Lifecycle Management (CDDLM) Deployment API
Author: S. Loughran

Group Updates

New since GGF16:

Grid Interoperation Now Community Group, GIN-CG
Area: Grid Operations (Community)
Chairs: Erwin Laure, Phil Papadopoulos, Stuart Martin
Email: gin@ggf.org

GGF Perspectives and Directions...continued from cover

new innovations to improve interaction and converge around important requirements within our community – the Voice of the Community (VOC) forum and the Vendor Adoption Forum (VAF). The VOC is designed to facilitate dialogue between end users and our grid standards development activities. By better capturing requirements, we hope to improve both the quality and timeliness of our standards. The VAF brings together vendors & developers to work with the GGF standards development process to again improve the quality and timeliness of our standards – enabling better clarity on adoption issues and making these standards more feasible and cost-effective for vendors & developers to implement. We strongly encourage you to play an active role in helping to shape these forums and add your voice to our standards development process.

Convergence or "coming together" is also at the heart of our continued efforts between GGF and EGA to create a new organization that can deliver results faster, communicate more effectively and continue to collaborate with key industry partners to accelerate grid adoption. Since our announcement in Feb 2006 of our intent-to-merge, the two organizations have been hard at work executing the merger integration plan. During GGF17, we are putting the finishing touches on our plans for the new organization and anticipate the ability to legally merge the two organizations as previously communicated during late May. Once legally merged, the new organization will spend the summer months completing the merger integration including (1) finalizing the board and day-to-day operational leadership; (2) transitioning existing members and recruiting new members to the new organization; (3) developing and fine-tuning our plans and priorities so that the new organization can hit the ground running during our "coming out party" later this year. Stay tuned for upcoming announcements in this area.

"GGF is a place where we celebrate diversity. We have a rich fabric of diverse ideas, requirements and opinions. GGF is also a place where we encourage convergence..."

Finally, convergence is often illustrated in collaborations that GGF establishes throughout the broader industry. Several important collaborations come to mind. The first is being managed by GGF's working group known as the Standards Development Organization Collaboration on Networked Resources Management (SCRM). The work of the SCRM group has resulted in the recent announcement of an online reference guide of specifications and standards for the management of networked resources. This reference guide represents a collective volume of relevant standards developed by leading standards development organizations and is highlighted in a recent press release. The second collaboration that should be highlighted is the collocation of GGF17 with Grid World Japan Exhibition and our ongoing partnership with IDG World Expo. We want to thank our Japanese hosts at IDG Japan and Grid Forum Japan for their hard work on behalf of our community. In an article later in this newsletter about GridWorld (September 11-14, Washington Convention Center), Anjali Chawla from IDG World Expo, discusses plans for this exciting event. This second annual event, held in conjunction with GGF18, is designed for business and technology professionals responsible for shaping the direction of, and deploying grid solutions within research, industry, government.

As always, thanks go out to all our hard working and dedicated group members and participants. By "coming together" within GGF, we enable the transformation of our diverse backgrounds and opinions into great ideas, tangible best practices and standards that enable pervasive adoption of grids worldwide.

Breaking News

Resource Management Standards Landscape Detailed by Cross Institutional Group within Global Grid Forum

LEMONT, Ill. (May 10, 2006) – Global Grid Forum (**www.ggf.org**) today announced an online reference guide of specifications and standards for the management of networked resources. Compiled by experts from cross institutional standards bodies throughout the world, this reference guide is designed to grow and develop with the industry. The wiki (**www.ggf.org/scrm-wiki**) is available to anyone involved in grid or management technologies, free-of-charge, and does not require registration.

Developed in wiki form, the information will be continuously updated by grid and resource management professionals throughout the world. Experts and institutions interested in adopting or researching these technologies are encouraged to submit additional information as appropriate. The Global Grid Forum and the various standards bodies have established strict submission, data review and publishing requirements to maintain the integrity and legitimacy of information posted to this wiki.

Created within Global Grid Forum's working group known as the Standards Development Organization Collaboration on Networked Resources Management (SCRM), this reference guide represents a collective volume of relevant standards from leading industry bodies including the Global Grid Forum (GGF), the Distributed Management Task Force (DMTF), the Organization for the Advancement of Structured Information Standards (OASIS), the Storage Networking Industry Association (SNIA), the Tele Management Forum (TMF), the Internet Engineering Task Force (IETF), the International Telecommunication Union – Telecommunication Standardization Sector (ITU-T), and the World Wide Web Consortium (W3C).

"GGF is excited to be the venue for these respected and established organizations to work collaboratively to produce a landscape of standards for the management of networked resources," said Mark Linesch, chairman of Global Grid Forum. "This landscape and our continued work together helps to insure a better understanding of the relationship between various industry standards – enabling more effective communication and identifying opportunities for future collaboration."

GridWorld 2006 Update

By Anjali Chawla
GridWorld Brand Manager

IDG World Expo successfully launched GridWorld in Boston last year with the active support of the Global Grid Forum. GridWorld was conceived to help drive the adoption of grid in the enterprise by focusing on the commercial benefits of integrating grid technologies, products and solutions into core IT operations.

This year's event promises to build on an already existing and active grid community. Washington DC gets the honor of hosting the 2nd annual GridWorld Conference, September 11-14 at the Washington Convention Center, and the theme is "**Achieving Agility, Efficiency and Innovation in the Enterprise**."

In addition to the standards and community program of GGF18, the following new programs are being introduced at GridWorld 2006:

1. **The Solutions Program**, which focuses on the business case for grid, strategic business solutions and value for Senior IT Management. This is an intensive two day program with commercially oriented content in eScience, Finance, Life Sciences, Manufacturing, O&G

2. **The Technology Program**, which will explain the "how-to's" of grid deployment for IT Managers, Technology Innovators, Developers and System Administrators, Integrators and Architects. This is a four day program with technically oriented content across all platforms both open source as well as proprietary

Brought to the industry in collaboration with the Global Grid Forum/Enterprise Grid Alliance (GGF/EGA) and GlobusWORLD, this event leverages IDG World Expo's reach into the worldwide IT market, GGF's expertise in grid standards, best-practices and solution content, and an already established GlobusWORLD community.

Sponsors for this year's event include Altair Engineering, AMD, ASPEED Software, Cluster Resources, EMC2, GemStone Systems, HP, United Devices and Univa, to name a few.

More information including sponsorship opportunities are available at **www.gridworld.com**.

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