MAGIC Meeting
February 1, 2012

Attendees

Gabrielle Allen	NSF
Scott Brim	Internet2
Ian Foster	Harvard Un.
Andrew Grimshaw	
Shantenu Jha	Rutgers
Kate Keahy	ANL
Mark Kraus	
Miron Livny	ANL
David Martin	ANL
Don Middleton	UCAR
Grant Miller	NCO
Thomas Ndousse	DOE/SC
Mike Nelson	Georgetown Un.
Don Riley	Un of Md.
Alan Sill	Texas Tech Un
Ian Stokes-Rees	Harvard Un.
Steve Teucke	Un of Chicago
John Towns	NCSA
Paul Townsend	CoreStreet
Von Welch	Indiana Un.

Action Items

1. John Towns will identify a speaker for MAGIC on XSEDE

Proceedings
This MAGIC meeting was chaired by Gabrielle Allen of the NSF. The meeting focused on standards for Grids and cloud computing and was organized by Alan Sill.

XSEDE: Andrew Grimshaw
Andrew Grimshaw is the Co-architect, along with Ian Foster, of XSEDE. XSEDE standards enable users to interact with other standards; they provide flexibility, and prevent lock-in to a particular provider/standard.

The XSEDE architecture components are defined by their capabilities, interfaces, and attributes such as security and functionality. The architecture allows for component evolution over time. The architecture is a set of design principles that provide basic components. Standards for the components provide risk reduction and mix-and-match applications. XSEDE architecture has 3 layers and this presentation addressed primarily the service layer of the architecture. XSEDE users are science users, developers, and managers. Standards supported by XSEDED include OGSA, GridFTP, and WSTrust Secure token services. A given resource/component will implement one or more of these standards. OGSA Basic Execution Services virtualize a compute resource including: host, queue on a supercomputer, virtual machine images, and others. There are many interoperable implementations including GridSam, GenesisII, Unicore6, and Globus. The resource namespace service (RNS) is used to create a global shared namespace, analogous to UNIX directories. Almost anything can have an RNS path: files, directories, Web pages…

Use of open specifications reduces risk. It enables use of the best breed of mix and match. It allows innovation and competition and facilitates interoperation with other infrastructures.

Globus Related Standards: Steve Teucke
Steve Teucke is Deputy Director of the University of Chicago Computational Laboratory. Two components of Globus are the Globus toolkit which helps users build their grid and Globus Online, a software system that provides a Web interface. The Globus team co-authored many standards such as Z.509, OGSI, GridFTP, and WSRF. The Globus team also served on many other standards working groups.
The Globus Toolkit 5 provides X.509 and proxy services including SSL, GridFTP, and HTTP: and others. It does not provide WSI and WSRF. WSI (Web Services Interoperability) was led by IBM and Microsoft.
Globus Online also uses the Web standards of OAuth, OpenID, SAML (InCommon), REST, APTTP(S), XML, and JSON.
Globus development provided lesson learned including:
- You have to be cognizant of commercial interests
- OGF standards should focus on research scope of use
- Standards should follow technical maturation, not lead it
- Be cognizant of who you intend to affect with the standards
- Be careful not to interfere with the commercial sector
- Many standards tend to get developed outside of standards organizations, then are brought into the standards organizations
- Globus expedites the science community. If the commercial sector follows, so much the better

Globus standards are driven by user needs and requests, cost and complexity, and funding. Case studies for Globus include GridFTP extensions to be more firewall friendly. BES, and Web standards including REST, AJAX, and OAuth

SAGA: Shantenu Jha
Shantenu Jha discussed SAGA. SAGA is like MPI for distributed computing. It is a simple and stable top-level API. SAGA developers work with users to provide end-to-end distributed infrastructure. SAGA is a consumer of standards including: OGF Core API, Advert API extension, Service Discovery API Extension, Information Service navigator and others. Endusers request a framework and tools provided by SAGA. They rarely request the development of new standards. SAGA assists in end-to-end integration. SAGA is implemented on XSEDE, EGI, and OSG and is used in the commercial sector, e.g., Airbus and BT. Standards are an important strategy for sustainability. Service discovery uses SAGA for many developing collaborations. Standards are a route to interoperability. SAGA is deployed and used in FutureGrid as an access layer into many middleware systems. Job/task management/ data standards play a role in higher-level abstractions. The Pilot API is part of the emerging OGF/SAGA resource package. It has semantic commonality with OCCI.
SAGA was aimed toward enabling user environments that are scalable and interoperating.

Discussion on Standards
Miron Livny is trying to make environments available to real users. It would be important to engage more computer scientists from the start. We need to do a better job of engaging the general community of applications developers and users.

OGF Cloud Standards: Alan Sill

OGF has been working on standards development and trying to engage industry. OGF has worked on Federated ID Management. Other issues it has addressed include: Virtual Organizations, Delegation of trust, network management, workflow management, data policy enforcement, data format description, service agreements, secure fast 3rd party data transfer, and cloud computing interfaces. OGF has been seeking to engage the commercial community to work on mutual adoption of standards. OCCI and OGF are gaining substantial experience in real-world cloud and Grid applications. OGF is involved in developer outreach, standards interoperability, demonstrations, and ongoing road-mapping activities in cloud computing.

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Future MAGIC Meetings
March 7, 2:00-4:00, NSF, Room II-415
April 4, 2:00-4:00, NSF, Room II-415