



**MAGIC Meeting**  
**March 2, 2011, 2:00-4:00**

Attendance:

Gabrielle Allen, NSF  
Shane Canon, NERSC  
Rich Carlson, DOE  
Susan Coughlin, ANL  
Ian Foster, ANL  
Dan Gunter, LBL  
Shantenau Jha, LSU  
Paul Love, NCO  
Mark Luker, NCO  
David Martin, ANL  
Stu Martin, ANL  
Mike Nelson, Georgetown U.  
Don Riley, U. of Maryland  
Mike Seablom, NASA  
Alan Sill, OGF  
Bill Turnbull, DOE  
Jophn Volmer, ANL  
Wendy Wigen, NCO

Action Items

1. Alan Sill will send to MAGIC, via Grant Miller, the details of the April 7-8 NIST Workshop on Cloud Computing
2. Grant Miller will send an inquiry to the MAGIC Federal agencies asking if they would be willing to sponsor a workshop on High Performance Science Requirements for Cloud Computing
3. Grant Miller will include on the April MAGIC agenda, Alan Sill's proposal for a workshop on High Performance Science Requirements for Cloud Computing
4. Mike Nelson will send MAGIC information on TechAmerica.

5. The April MAGIC agenda should ask if MAGIC should discuss and develop a position on cloud computing for science.

#### Proceedings

This meeting of MAGIC was coordinated by Rich Carlson of DOE.

#### Globus Online

Ian Foster provided a briefing on Globus Online, which was developed in coordination with LBL, ISI, OGF, Miron Livny, and many others. It provides online resources to support science users. Data is increasing rapidly in such areas as bioinformatics, High Energy Physics, astronomy, earth system modeling, and a number of other areas. The cloud can provide many services to provide support for capturing, computing, analyzing, archiving, and presenting information. Cloud services can include:

- Software as a Service: Applications are owned, delivered, and managed remotely by one or more providers. Application uses a single code base
- Platform as a service
- Infrastructure as a service

These support a wide range of business services such as email, accounting, data analytics, content distribution and many other services. There are a wide range of science services that cloud computing could support such as collecting data, moving data, running simulations, communicating among collaborators, and many others. Globus Online has been addressing the need to move data Globus Online is focused on out sourcing the time-consuming activities associated with data transfer: register, transfer, monitor, and customize endpoints. Globus Online also provides other functions: manage endpoints; retrieve detailed event information; update profile; sync directories (resync, but faster); asynchronous fire and forget. Globus Online is built as a scale-out Web application hosted on Amazon Web Services. State data is replicated over multiple storage servers. The number of VMs scales dynamically. Current tasks for Globus Online include:

- Globus Connect: For firewalls, sites without Grid FTP are enabled
- Higher level data management including group management, data publication, replication and other data services
- Integration with applications such as the Earth Systems Grid gateways.

Globus Online (GO) is working with the Condor group to stage data for use by Condor. GO is working with science communities of the NSF, NIH, DOE, DOD. It is not working with the commercial communities.

Proposal for a MAGIC Workshop on high-performance requirements for Cloud Services: Alan Sill

NIST is holding its next Cloud computing Workshop April 7-8.

A:I Alan Sill will send to MAGIC, via Grant Miller, the details of the April 7-8 NIST Workshop on Cloud Computing

Alan Sill proposes that MAGIC consider holding a workshop on High Performance Requirements for Cloud Computing. Globus is holding a workshop at Argonne National Laboratory April 13-14. A MAGIC Workshop could be held at the same location following the Globus Workshop. TeraGrid 2011 is holding a conference July 18-21 in Salt Lake City. OGF32 will also be collocated. This offers another opportunity to host a workshop on cloud environments to support agency science missions. Holding a MAGIC Workshop will require identifying an agency sponsor.

AI: Grant Miller will send an inquiry to the MAGIC Federal agencies asking if they would be willing to sponsor a workshop on High Performance Science Requirements for Cloud Computing AI: Grant Miller will include on the April MAGIC agenda, Alan Sill's proposal for a workshop on High Performance Science Requirements for Cloud Computing

Grid Roundtable

- CEDPS, CDIGS: They are focused on Globus Online implementation through improving performance, error messaging, and troubleshooting. They are integrating Globus Online into user interfaces.
- OGF: OGF released the DFDL data format description language. It is now a formal recommendation. OGF is developing a new version of a database interface using Grids.
- Identity Management: U.S. identity management users number over 5 million now. The Chinese are rapidly implementing identity management. The U.S. government is working with InCommon. Silver is moving forward rapidly. NIH is using some InCommon silver applications. Five virtual organizations (VOs) are working to implement identity management including LIGO, IPlant, Women's Earth Science Network, and GENI using InCommon services.
- IETF is working on Moonshot to bring federated ID management to the Web. The Swedes are working on a SAMLK gateway for SAML to enable log-on from a variety of endpoints using SAML assertions by reliable parties. It advertises where you were authenticated.
- Magellan: The Argonne compute cloud is moving to OpenStack. It is in early user mode. The hardware is complete except for Advanced Networking Initiative (ANI) testbed gear. A joint demonstration is taking place between NERSC and Argonne using a bioinformatics application. The NERSC implementation is working in batch mode. They are collecting statistics about performance and applications. They are using Eucalyptus as a basis. The STAR project at Brookhaven is some Magellan resources to do real-time beam analysis. NERSC is looking at performance of applications in a cloud environment. Mid-range

applications experience significant slow-downs at even moderate scales. They are considering how to evaluate the costs for cloud computing. NERSC is moving to OpenStack which, in evaluation, performed better than Nimbus and nebula. OpenStack has a flexible security stack.

- NASA Nebula: The structure is in-place for internal use of Nebula at NASA. A second nebula container is being installed at Goddard Space Flight Center. Both the Ames Research Center and the GSFC versions are maintained by Ames. There are about 400 test users for nebula. Nebula has moved from Eucalyptus to OpenStack which provides better security and scalability. Nebula is interested in getting science users on-board, ramping up science data analysis, and using the cloud to enable home science.

#### Agency Roundtable

TechAmerica (Trade Group) has announced a cloud commission called CLOUD to look at policies for promoting cloud use and eliminating barriers to their use. Mark Bennioff is chair of this group

AI: Mike Nelson will send MAGIC information on TechAmerica.

DoD has an interest in Federal geospatial use of cloud computing

DOE, Oscars Division does not own or operate cloud resources. They started a research project, Magellan, to evaluate if cloud resources can effectively be used for science applications.

AI: The April MAGIC agenda should ask if MAGIC should discuss and develop a position on cloud computing for science.

#### Agency Meetings of Interest

- OGF – next event in Taiwan in March; looking at grid to cloud workshop in US perhaps in conjunction with TeraGrid meeting, Salt Lake City; smaller events April 16 Boulder Cloud Standards Interoperability plug Fest – remotely available; May, in Boulder, Cloud Standards summit; looking for a workshop in late spring early summer
- Information on Grid workshop standards and grid- CCGrid 2011  
webpage: <http://www.cloudstrategypartners.com/InterCloudGrid11.htm>

#### Next MAGIC Meetings

April 6, 2:00-4:00, NSF, Room II-415

May 4, 2:00-4:00, NSF, Room II-415